



COMBAT

Verdun 1916

French Soldier **VERSUS** German Soldier

David Campbell



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Illustrated by Adam Hook

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Introduction

In the lines around Verdun during those first bitter weeks of January 1916, the fury and immense loss that characterized the battles of 1915 seemed rather far away. The ferocity of the Great War – the ‘war to end all wars’ – had left the fortress city and its environs more or less alone, with initial German advances on the River Meuse turning Verdun into a salient, but not attacking towards the city itself.

The positional stalemate that had developed all along the Western Front in the previous 15 months was an aberration. Generaloberst Helmuth von Moltke (aka Helmuth the Younger), the Chief of the German General Staff who led Kaiser Wilhelm II’s armies in the first few months of the war, was well aware of the danger his nation faced if it

A column of German troops in marching order move towards Verdun, February 1916. In the weeks leading up to the German attack, 5. Armee’s army corps (VII. Reservekorps, XVIII. Armeekorps, III. Armeekorps and XV. Armeekorps) were positioning themselves to the north of Verdun on both banks of the River Meuse, supported by over 1,200 artillery pieces. Despite such apparently overwhelming German firepower, it would be up to the infantrymen to take the battle to the enemy, their path hopefully eased by artillery barrages and the actions of the *Stoßtruppen* (‘shock troops’). (Maurice-Louis Branger/Roger Viollet via Getty Images)





were forced to fight enemies on several fronts. His plan was to employ a version of the traditional Prussian *Vernichtungsstrategie* ('strategy of annihilation') in the West that would crush France in a matter of weeks or months at most (echoing his uncle Moltke the Elder's glorious campaign of 1870 during the Franco-Prussian War), and which would then allow the German Army to redirect its entire focus eastward to confront what Moltke and his staff saw as the main threat to Germany: Imperial Russia. Unfortunately for Moltke the *Bewegungskrieg* ('war of movement') that he had envisaged for the German 'right hook' that would smash through Belgium and envelop the French left flank was compromised; logistical logjams meant that the attack timetables, already unfeasibly tight, could not be kept to; in addition, Moltke's own removal of much-needed troops from the main attacking force to bolster other arguably less-important fronts weakened the strength of the German attack at its most crucial point; and finally there was the unexpectedly stubborn resistance of the French Army and its allied British Expeditionary Force at the Battle of the Marne on 6–12 September 1914. The sum of all these factors saw Moltke's great attack first stutter and then stop, ground down into the bloody mud of French fields.

On 14 September Moltke was succeeded by General der Infanterie Erich von Falkenhayn, a man with the Kaiser's favour (curried during Falkenhayn's tenure as the Prussian Minister of War) but little influence within the German General Staff where, due to his years of foreign service in China, he was something of an unknown quantity. For Falkenhayn on the Western Front the British were the ultimate enemy to be defeated – they were presumed to be the most unrelenting and aggressive of Germany's

A group of French infantrymen pose for a photograph, 1918. The uniforms, weapons and equipment shown here are much the same as those used at Verdun. The man on the left holds the CSRG Chauchat, the automatic rifle that would see its first use in April 1916 (minus the flash-hider that would only start to appear in 1917), while the man next to him carries the Vivien-Bessières rifle grenade launcher, also introduced in 1916; the others have Lebel rifles and one man sports a pair of Billant F1 hand grenades. Several of the men also bear gas-mask tins: the one-piece M2 gas mask had to be folded for storage in the tin, something that often caused damage to the rectangular viewing panel on early versions of the masks, so a redesigned M2 gas mask in different sizes and with separate round eyepieces was issued from April 1916. (Photo12/UiG/Getty Images)



enemies, and the least likely to accede to an ending of the war on German terms. Unfortunately, the defensive positions held by Britain's armies, combined with their perceived strength (seen as comparable to German forces in many ways), made an attack on them unlikely to be successful enough to drive them out of the war. The French Army, however, was an easier prospect: mauled in the battles of 1915, large numbers of captured deserters had reinforced German perceptions about French war-weariness,



A line of German prisoners, Verdun, 1916. Imprisonment offered captured soldiers a chance to see the war through the enemy's eyes, one such case being a half-composed letter to his mother taken from Feldwebel Karl Gartner, a Pomeranian soldier of Infanterie-Regiment 243 who was captured near Fort Vaux in late March: 'our losses are more terrible than I understood. I have just met Ludwig Heller, my comrade in the 29th. He is in charge of the burial parties and gives me terrible news of the scenes of carnage which took place in front of Vaux and Douaumont ... we have been badly informed by our officers. We are just maintaining our positions on the ground we have won after fearful losses and we must give up all hope of taking Verdun ... The war will continue for an indefinite period, and in the end there will be neither victors nor vanquished' (quoted in Dugard 1917: 268–69). (Courtesy of Brett Butterworth)

the parlous nature of the French military infrastructure, and the brittle nature of French morale.

Falkenhayn saw the repeated French failure to break through German defences as confirmation of his assumption about the state of France's armies, namely that they were deficient in morale, operational acumen, and were also nearing exhaustion through losses of men and *matériel*. Such a view was underpinned with Falkenhayn's general prejudice (not uncommon in pre-war Germany) about the French national character coupled with that nation's perceived political and economic decline, which were seen to be in stark contrast to the morally robust and industrially ascendant Germany (Foley 2005: 184–85). To crush the French would in turn cripple Britain's capacity to continue the war, knocking 'England's best sword' out of her hand in Falkenhayn's memorable phrase.

German plans for 1916 would centre around the French positions in the Argonne in north-eastern France. The overarching approach was one of *Ermattungsstrategie* ('strategy of attrition'), drawing the French into a battle that would necessitate their commitment of ever-greater numbers of front-line and reserve troops, eventually forcing the British to support them in a similar manner. Such an approach would be so ruinous that it could force the French and British to the negotiating table; and even if it did not, with the armies and reserves of her two enemies thus ground down by attrition, the German Army could then launch a major offensive

OPPOSITE

French infantry prepare to move up the line during the battle of Verdun, 1916. Unlike the German Army, which would leave its infantry divisions in the line, the French Army (under Général de division Philippe Pétain's initiative) would regularly rotate its infantry divisions out in order to allow them to recuperate, bringing in fresh formations to replace them. (Archive Photos/Getty Images)

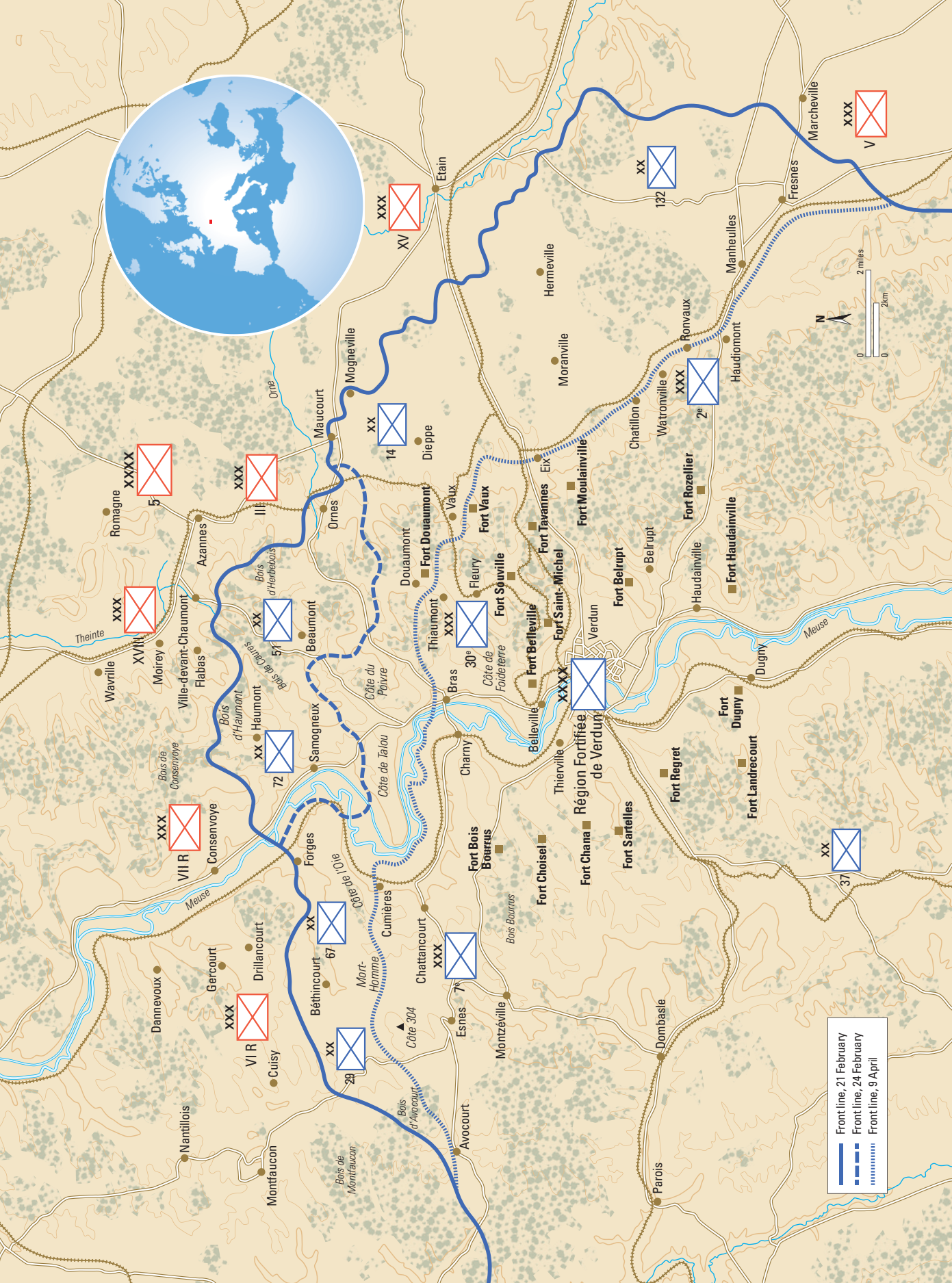
Positioned as it was at the vanguard of an often bellicose France's eastern border, Verdun was well-used to the rhythms of military life, serving as a citadel since the military engineer Vauban's time and last seeing action during the Franco-Prussian War of 1870–71, during which it was the last of the great French fortresses to fall. A radical series of defensive improvements had been undertaken to the whole area from 1872 during the early years of the Third Republic, a new series of forts being constructed in a defensive chain around Verdun so as to pose a significant obstacle for any attacker. This process was subject to further rounds of modernization in 1885 and 1893, with the latest improvements including the addition of reinforced-concrete roofing, and much-improved steel turrets and observation cupolas for the forts' armament. The town of Verdun itself was set astride the Paris road from the west and the Meuse, a sluggish river meandering south to north that regularly flooded the lowlands every winter, and which effectively cut the battlefield into western (left) and eastern (right) sides. On the western side the winding course of the Meuse cut into both sides of the river valley, leaving a series of interlocking spurs that dominated passage along the valley and overlooked the river crossings, while on the eastern side the hills rose into high cliffs that dropped steeply to a marshy plain (Holstein 2009: 9), the highest point being capped with the strongest of all the defensive sites, Fort Douaumont. Woods dominated much of the ground on both sides of the river, with one of the key positions, the long wooded hilltop of the Bois de Caures, straddling the two roads that ran down from the German lines along the river valley and on south towards Verdun. The job of taking

Verdun – Operation *Gericht* (Judgement) – fell to 5. Armee (Crown Prince Wilhelm of Prussia), with the main effort to be concentrated on the eastern bank of the Meuse: the army was composed of VII. Reservekorps (Generalleutnant Johann von Zwehl), XVIII. Armeekorps (General der Infanterie Kuno Dedo von Schenck), III. Armeekorps (General der Infanterie Ewald von Lochow), XV. Armeekorps (General der Infanterie Berthold von Deimling, from 25 February onwards), and V. Armeekorps (General der Infanterie Hermann von Strantz, from March 1916). The western bank would be covered by VI. Reservekorps (General der Kavallerie Georg von der Marwitz), which would only provide artillery support in the opening stages of the battle. Facing them were the weakened and unsuspecting troops of the Région fortifiée de Verdun ('Fortified region of Verdun', Général de division Frédéric-Georges Herr). The units that would bear the brunt of the German attack were from the 30^e Corps d'armée (Général de corps d'armée Paul Chrétien), consisting of the 72^e Division d'infanterie (Général de division Étienne André Bapst) and the 51^e Division d'infanterie (Général de division Boullangé); to the right of the 51^e DI were the 14^e Division d'infanterie (Général de division Albert Crepey, from 7^e Corps d'armée) and the 132^e Division d'infanterie. The 7^e Corps d'armée (Général de division Georges de Bazelaire) was responsible for the defence of the western bank of the Meuse: it had authority over two unattached divisions – the 29^e Division d'infanterie (Général de division Guyot d'Asnières de Salins) and the 67^e Division d'infanterie (Général de brigade Ernest Jean Aimé) – as well as the Algerian 37^e Division d'infanterie (Général de division Deshayes de Bonneval) in reserve behind Verdun.

of its own and break through the weakened Allied lines. To be successful such a strategy required the German Army to maintain a suitable reserve, which in turn would define one of the most characteristic elements of the campaign – the reliance on enormous numbers of artillery pieces to do the hard work of obliterating the French Army, saving the men for later offensives. The French would have to take the bait, of course, which meant picking a target the loss of which would be too wounding for French pride to countenance: the ancient and much-vaunted fortress city of Verdun.

Mainstay of the German infantry, the MG 08 machine gun was a Maxim variant, chambered for the 7.92×57mm round. It used a cloth ammunition belt (generally reliable though the fabric could swell when wet, making cartridges difficult to extract and resulting in jams), and it had an effective range of 2,000m and a rate of fire of 450–500rd/min. (Courtesy US National Park Service, Springfield Armory Historic Site, SPAR 787)





The Opposing Sides

ORIGINS

French

The French Army had trained and equipped itself for the war that it wanted to fight, not the war that was eventually thrust upon it. Its senior officers correctly presumed that Germany's main course of action would be to try to annihilate France as quickly as possible before turning eastward to deal with Imperial Russia. The French could adopt a defensive stance that stalled any German attack until their Russian and British allies could join the fight, but a riskier offensive strategy proved to be considerably more alluring. The French Army's officer class had for some time been obsessed with the idea that victory could only be won through aggressive action, partly in reaction to the perceived weaknesses that led to the defeat by Prussia in 1871, and partly through a belief that such an approach fed in to the core strengths of the French soldier and thus could act as a uniting force in the face of the enemy. Characterized by a disdain of modern military technology such as machine guns and heavy artillery, this doctrine celebrated valour, aggression and the idea that the right spirit could drive the bayonet home and secure victory. There were also a number of naked political considerations that underpinned the decision to embrace the *offensive à outrance* ('overwhelming assault'), ensuring that when the French Army took to the field in August 1914 it did so with a doctrine that all but ensured the unnecessary deaths of tens of thousands of men.

The battles of 1915 were scarcely any better, with the result that by early 1916 the French Army's acute shortage of men and artillery pieces saw quiet sectors such as Verdun drained of both in an attempt to make good some of the terrible losses incurred over the previous 18 months. Some infantry



and artillery reinforcement was reluctantly added to the Verdun sector when it became incontestable that the Germans were planning something, but Généralissime Joseph Joffre, commander-in-chief of French forces on the Western Front, could not see what strategic advantage could be gained from such an attack. Some further effort was made to shore up the defences on the eastern bank of the River Meuse, but the forts that dotted the surrounding hills were not re-armed, their skeleton garrisons not reinforced. Fort Douaumont, the jewel in Verdun's defensive crown, was manned by barely 60 territorial troops.

German

The war of movement had come to an end by October 1914. The German armies, digging in and building up their defences, could not afford to rely on a purely defensive posture on the Western Front – there would be no victory from such a strategy. Nevertheless, the offensives conducted by all sides through 1914 and early 1915 had shown that something fundamental had shifted in the balance between attackers and defenders, thus requiring a different approach.

It was clear that, on a battlefield where any sort of breakthrough first necessitated the capture of an enemy's trench line, tactics needed to adapt to increase the infantry's chances of successfully achieving such a seizure. At the beginning of 1915, Oberst Max Bauer of the German General Staff established three *Front Versuchstruppen der Oberste Heeresleitung* ('front line experimental units of the Supreme Command'); a 50-man *Flammenwerfer-Abteilung* ('flamethrower detachment') led by Hauptmann Hermann Reddemann, a *Grabenmörser-Abteilung* ('trench mortar unit') under Major Lothes, and a *Sturmkanonen-Abteilung* ('assault gun unit') under Major Kalsow. The assault-gun unit was equipped with Krupp 3.7cm light field guns, the idea being that they could use direct fire in

The walls of Fort Douaumont, photographed sometime during 1916, probably soon after its embarrassingly easy capture by German forces on 25 February. The forts of Verdun created a supposedly impregnable set of interlocking defensive positions on which any attacking army would be caught up and gradually worn down. How effective they may have been will never be properly known, as the initial German successes against fortresses such as Liège in the first weeks of the war undermined French confidence in fixed fortifications, something compounded by the steady removal of men and guns from the Verdun forts more or less all the way up to the German attack. (Photo 12/ Universal Images Group via Getty Images)

German troops on the offensive in 1916. Aside from the specially trained *Pioniere*, many of the *Stoßtrupp* detachments used in the early months of Verdun were drawn from 5. Armee's existing infantry regiments and were comprised of picked men who were selected for their aptitude and initiative, trained and then equipped with tools and weapons specific to the requirements of their expected missions. (Neurdein/Roger Viollet via Getty Images)



support of a breakthrough attempt, ideally improving the infantry's chances of a taking a trench line; the first dedicated assault detachment (known as *Sturmabteilung Kalsow*) was formally established on 2 March 1915, while the first flamethrower battalion (III. Garde-Pionier-Bataillon) was established under Reddemann some two weeks later on 15 March. Kalsow's unit had an inauspicious start: after its deployment in June and July 1915, *Sturmabteilung Kalsow* suffered almost 184 casualties and lost six field guns, 30 per cent of its strength. The various elements of Kalsow's command had not been well co-ordinated with the other infantry units, and the field guns he was using were not particularly effective, the 3.7cm shell being little more use than mortars or machine guns; the 3.7cm guns also proved to be surprisingly cumbersome in the field.

Kalsow was replaced by Hauptmann Willy Rohr on 8 September 1915, with the unit being renamed *Sturmabteilung Rohr* on 13 September. The small force got rid of the 3.7cm guns and instead started using captured Russian 7.62cm artillery pieces with lightened carriages and shortened barrels that were christened *Infanteriegeschütze* ('infantry guns'); as they were to be used in the direct-fire role, they could suppress an enemy position until the very moment of the infantry's attack, something not possible for indirect-fire weapons. Further support came in the shape of four light mortars, a company of six machine guns and a six-flamethrower section seconded from III. Garde-Pionier-Bataillon; Rohr worked closely with Reddemann on the development of assault tactics that could make the most of their two units. New operations proved the efficacy of Rohr's approach, his unit being committed to the Verdun campaign where it proved its worth once more; as a result of its successes it was expanded to a four-company *Sturmabteilung* ('assault battalion') on 1 April 1916 and in May was given the responsibility to train detachments from other Western Front armies in the new tactics. The new methods having been well and truly established, further battalion-sized units would be raised (16 by the end of the year), with Rohr's original unit eventually becoming known as *Sturm-Bataillon Nr. 5 (Rohr)* on 7 February 1917.

RECRUITMENT AND TRAINING

French

Recruitment was based on region, with a division's regiments drawing their conscripts from a spread of neighbouring *arrondissements* (local government areas), something that resulted in strong institutional ties and which also proved to be advantageous in an army in which over three-quarters of the men were from rural environments, many of which had their own distinct dialects. All able-bodied men were liable for three years of active service from their 20th birthday (selected by ballot), followed by 11 years in the reserves, a further seven years in the territorials, and a final seven years in the territorial reserves, for a total of 28 years of duty (Sumner 2017: 4–6). Reservists were expected to attend two refresher training sessions each year totalling 40 days, though few seemed to fulfil their obligation; territorial troops had one nine-day obligation per year, with territorial reservists only expected to attend a single day's refresher training annually. Territorial troops were local by design and were often relegated to protecting static defences and guarding lines of communication, though many territorial units were employed as work battalions. The majority of recruits found themselves in the infantry, supplemented by imperial troops from North Africa (*zouaves* were conscripted from white colonists, the *tirailleurs* volunteers from indigenous Algerian and Tunisian peoples), West Africa (usually termed 'Senegalese'), Indochina, and the international volunteers of the Foreign Legion (Sumner 2017: 7–8).

Good training personnel were in short supply, a situation exacerbated by the low level of NCO re-enlistment – a mobilized French infantry regiment

French troops advancing cautiously under shellfire during the battle of Verdun. The remorseless shelling and German attacks during the opening stages of the battle resulted in French divisions suffering significant casualties as well as lost ground, but the stubborn defensive character of Pétain allied to the aggressive nature of French doctrine meant that counter-attacks were launched as soon as possible after any local reverse. The cost to the French infantry was consistently high, but it forced the Germans to fight for almost every metre of ground, and resulted in gains that were usually smaller and far more costly than had been initially envisaged by General der Infanterie Erich von Falkenhayn's planners. (General Photographic Agency/Getty Images)





This *chasseur*, a long-serving soldier in Lieutenant-colonel Driant's 56^e BCP, has already endured a morning of thunderous shellfire from the German artillery that has battered the French line almost out of existence, with many of his compatriots missing, wounded or dead. The respite from the artillery fire heralds the main attack by the German infantry, and the rifleman rushes forward to take up position on the lip of what had so recently been a trench.

Bois des Caures, 22 February 1916



Weapons, dress and equipment

He carries an M1886/93 Lebel service rifle (1) chambered for the 8×50mmR cartridge. The rifle has its *Épée-Baïonnette* M1915 (2) fixed, this version distinguishable from the earlier-pattern Lebel M1886 bayonet by virtue of its removal of the original model's quillon, an unnecessary flourish in wartime.

He wears a *casque* 'Adrian' M1915 ('Adrian helmet'; 3), a single-breasted *Capote Poiret de troupe 4e type* ('overcoat'; 4) with *pattes de collet de troupe* ('collar patch insignia') of the 56^e BCP, over a *cravate* and *chemise* ('shirt'). His *pantalonculottes* M1915 ('trousers'; 5) are the traditional dark blue of the *chasseurs*, as are his *bandes molletières* ('leg wraps'; 6); his *brodequins* M1912/16 ('ankle boots'; 7) are natural leather to save on production costs.

He is equipped with a *ceinturon* M1903/14 ('belt'; 8) and a set of *bretelles de suspension* M1892/14 ('suspenders'; 9); on his belt he carries *cartouchières* M1905/14 ('cartridge pouches'), two on the front of his belt and one (10) in the small of his back, holding a total of 88 rounds in 11 eight-round packets (four packets – 32 rounds – in each of the front pouches, three in the rear pouch). On his left hip he carries his *Fourreau* M1886 ('sword bayonet and sheath') in a *Porte-épée* M1886/14 ('bayonet frog'; 11). The rest of his equipment consists of a *sachet* S2 pouch (12) containing the rather rudimentary *tampon* P2 gas mask and *lunettes* ('goggles'), a *bidon* M1877 ('canteen'; 13) and two *Étui-Musettes* M1892 ('case-haversacks') slung across each shoulder, one (14) for his rations and the other (15) for sundries and hand grenades.

counted only 95 career *sergents*, many of whom filled administrative posts, while all of the 215 NCOs in a German infantry regiment were professionals (Porch 2003: 194). Re-enlistment was seen as something of a mug's game, and NCOs in particular were ridiculed and compared to prostitutes if they were seen to be career soldiers. Basic training was standard for the time, and was conducted almost entirely within the conscript's regiment, though exposure to large-scale operational training was limited; the French Army laboured under the long-term problem of inadequate training grounds, with little prepared space large enough to allow for the serious combined-arms exercises that were essential in the forging of a modern fighting force. The infantry doctrine that was taught to new soldiers was also rather haphazard: despite the fact that each new edition should have superseded its predecessors, the various *Règlements de Manoeuvre de l'Infanterie* (1875, 1884, 1902, 1904 and 1914) were all used concurrently by different training establishments as they saw fit, though the *Règlements* were all consistent in their belief that it was the soldier's offensive spirit that was the ultimate key to victory (Greenhalgh 2014: 18).

German

Recruitment was managed by the local regimental depots of the local army corps district. Military service was obligatory, starting at an individual's 17th birthday and continuing until he was 45. At 18, the recruit was eligible for service in the Landsturm (the national home defence force), and from his 20th birthday he would serve two years with the standing army, followed by five years as a reservist, five years in the first tier of the Landwehr ('home forces'), and then the remainder of his service split between the second tier of the Landwehr (until 31 March of his 39th year) followed by the Landsturm until the age of 45 (Stone 2015: 173–76). The outbreak of World War I on 28 July 1914 simplified matters somewhat, with the complex age-related reservist system effectively suspended and those under the age of 20 now eligible for service in the standing army.

Basic training was conducted at a regiment's depot in Germany (usually only 1–3 months from February 1915), with the responsibility for educating the new intakes usually in the hands of officers and men who were either retired from active service or undergoing a period of convalescence, with the result that most new recruits arriving at the front knew little more than how to march in step, fire their rifles and obey orders. Additional training was conducted at a *Feld-Rekruten-Depot* ('Field Recruit Depot') in the divisional area behind the front, the instructors being men fresh from the realities of combat who could put a realistic gloss on the 1906 *Exerzier-Reglement für die Infanterie* ('Field Regulations for the Infantry') that went beyond advancing in columns or skirmish lines (Gudmundsson 1995: 86). The applied education was vital; for example the 1906 regulations described advancing in a skirmish line as close (if the soldiers were within two paces of each other) or loose (if the distance between them was greater than two paces), but on a battlefield studded with machine guns and dominated by artillery such practices were little short of suicidal, as the horrifyingly high casualties of the first months of the war made clear (Bull 2014: 9).

Stoßtrupp recruits came from a number of areas; those who served in Rohr's unit were all volunteers, as were the majority who would go on to form the *Sturm-Bataillone*, but a variety of units organized their own recruitment and training, while many were picked men seconded from their regiments for a specific course of training that aimed to make them expert in the techniques required to storm and capture an enemy trench. By the end of 1916 the majority of *Stoßtruppen* were not from *Sturmabteilung Rohr* or specialist *Pionier* units, but came from the newly raised *Sturm-Bataillone* or the numerous 'assault units' developed by individual regiments.

The training undertaken by potential *Stoßtruppen* under Rohr's tutelage in the first half of 1916 consisted of a two-week course of intensive weapons education (hand grenades were still an unknown quantity for many line infantry in early 1916) and live-fire exercises, all built around practice assaults on a specially constructed dummy trench system. The success that Rohr enjoyed was not unique; other ad hoc special-assault units had developed organically in a number of German formations throughout 1915, with much of the effort of such groups dedicated towards the formation of more effective trench-raiding parties. The historian Ralf Rath noted that this new form of training was not so much a self-contained system, but instead a style of instruction in which continual evolution and adaptation were consciously pursued (Raths 2009: 166).

MORALE AND LOGISTICS

French

The French Army of 1916 was not an organization noted for its dedication to the well-being of its men. Pay was generally poor, especially for enlisted men and NCOs, though that was more of an issue during peacetime than war. Other factors, however, contributed to the general sense of malaise that pervaded some units, especially around Verdun. French regiments, unlike their German and British counterparts, had no field kitchens, forcing the average infantryman to set his own fire if he wanted hot food. Medical services were a constant problem, with shortages of ambulances and medical supplies exacerbated by poor logistical management of the wounded, the end result being far more men maimed and dead than was inevitable. Nevertheless, the morale of the French divisions at Verdun held up remarkably well considering the particular horrors which that battle inflicted upon them. This was in part due to the genuine confidence the men had in Général de division Philippe Pétain, an officer who they trusted not to expend their lives carelessly, and one who was unafraid to be seen on the forward lines, inspiring those around him with his presence. A rather more practical factor was Pétain's insistence on the regular rotation of units from the front lines every 15 days; other commanders in other battles had left units *in situ* for weeks at a time, simply reinforcing their ever-increasing losses with new drafts of men, but Pétain understood the need to let his regiments rest and recuperate, something that almost certainly kept many units from disintegrating under the pressure of ceaseless German attacks.



Hauptmann Willy Rohr, pictured in 1917. A career soldier with experience in training coupled with first-hand knowledge of infantry tactics on the front line, Rohr took over the training of *Stoßtruppen* from 30 August 1915 at Falkenhayn's instigation. The successful application of Rohr's tactics at Verdun resulted in the expansion of the unit to a battalion, with his contribution being acknowledged when it was redesignated *Sturm-Bataillon* Nr. 5 (Rohr) on 7 February 1917. (Graf Eberhard v. Schwerin/ Wikimedia/Public Domain)

RIGHT

An endless column of French troops and vehicles travel along the *Voie sacrée* ('sacred road') during the battle of Verdun, 1916. The 72km road connected Bar-le-Duc to Verdun and quickly became the main supply route to the battlefield as there were no other two-lane causeways or roads suitable for motor vehicles. During the critical week of 28 February–6 March, over 22,700 tonnes of supplies and 190,000 men were transported along the *Voie sacrée* to Verdun, a feat that would continue in the succeeding months (Horne 1964: 148). (Library of Congress)



FAR RIGHT

A portrait of a German assault trooper, likely from 1917 judging by the design of his gas-mask tin. In all other particulars he is armed and equipped in the same way as the *Stoßtruppen* that fought at Verdun; notable are his grenade bags (usually adapted from sandbags), large entrenching tool and his Kar 98AZ carbine. (SeM/ Universal Images Group via Getty Images)

OPPOSITE

A French M1886/93 Lebel service rifle. Revolutionary when it first appeared (the Lebel's cartridge was the first to utilize smokeless powder), by 1914 it was verging on obsolescence, but would see service through to 1918 and beyond. The Lebel rifle could hold eight 8×50mmR rounds in a tubular magazine, which, though it was of larger capacity than the magazines of most other rifles of the time, was hamstrung by the fact that it was very slow to reload as it did not use a Mannlicher- or stripper-clip system. (Courtesy US National Park Service, Springfield Armory Historic Site, SPAR 1181)

As far as logistical matters were concerned, the French management of Verdun was something of a triumph. The most important factor in the survival of the French position was the establishment and subsequent maintenance of the *Voie sacrée* ('sacred road'), a literal lifeline that ferried men by the thousand and supplies by the tonne every single hour of the day from the opening of the battle until its conclusion ten months later. Set against that undoubted success was the reality of supplying the forward positions with food, water and ammunition. The landscape, quickly reduced to an unrecognizable morass by incessant shellfire, made transporting even the simplest loads extremely difficult, with trips of only a few kilometres taking many hours to complete, if they were completed at all. Men sent to get water or food could easily get lost in the confusing sameness of destruction, or become casualties themselves through misadventure or random enemy artillery fire. Ammunition in particular, heavy and awkward, proved difficult to lay down in sufficient enough quantities to guarantee that there would be enough to beat back the next German attack. For men lying in chains of muddy holes that were once trenches, the fear of running out of hand grenades or rounds for the machine guns was all too real, a fear often larded with a gnawing hunger and thirst that never seemed to go away.

German

Morale was generally good in the German divisions surrounding Verdun, but it could certainly be strained even before the first artillery shells were fired; the tension of waiting to attack was drawn out by days of bad weather, and there were a number of deserters that crossed over to French lines in the days before the battle. It is also worth remembering that the German Army was not one homogenous entity as such; rather it was four national armies, those of Prussia, Bavaria, Saxony and Württemberg. There were certainly occasional examples of ill-feeling between the national troops, most notably (and perhaps inevitably) towards the Prussians, who were sometimes

cast by the others as the instigators of the war. Within the *Stoßtruppen*, the *Pioniere* and associated assault troops, morale was high. Aside from the natural pride such troops felt in being members of an elite formation, the nature of their missions gave them a much greater sense of initiative and personal agency, important factors in vast mechanical battles that all too often stripped men of any sense of dignity, power or the capacity to do anything other than endure.

The first stages of World War I had highlighted the logistical shortcomings of the German Army. The reliance on railheads was almost absolute, the ideal distance between them and the front being no more than 100km; more than that and gaps would begin to appear between the troops and their supplies. The reality of campaigning often meant that the gap was greater, however, sometimes double the maximum acceptable distance, with the shortfall having to be made up by exhausted animals and unreliable motor vehicles that were not designed to operate in such rough conditions. Ammunition, particularly for the artillery, was consumed at a ferocious rate, far in excess of anything that the pre-war planners had envisaged, and the absolute necessity of providing artillery ammunition meant other necessities, such as feeding the horses and the men, were secondary. At Verdun all these factors would be mitigated or eliminated entirely. The French fortress city was little more than 10km away from the German lines, and nestled in the heart of a salient that enclosed it on three sides. Both major railheads north and south of the city had been captured in 1914 and were still in German hands, but even with such logistical largesse an additional railway spur had been laid down that ran almost to the edge of the German front line, allowing truly vast stockpiles of artillery shells to be built up in the weeks prior to the attack. There would be no shortage of food for the guns when the order came.

TACTICS AND WEAPONS

French

The French Army of 1914 had gone into battle trusting to élan and the bayonet, and paid the price. French doctrine evolved in the face of such losses, one notable example being the ideas proposed by Capitaine Andre Laffargue of the 153^e Régiment d'infanterie, who after being wounded in Artois in 1915 wrote a pair of monographs on how best to operate on the modern battlefield: *Étude sur l'attaque dans la période actuelle de la guerre, impressions d'un commandant de compagnie* ('A Study of the Attack in the Current Period of the War; Observations of a Company Commander') and *Conseils aux fantassins pour la bataille* ('Advice for Infantry in Battle'). Both works stressed aspects of trench raiding that were being independently developed by the Germans, including the use of infantry assault guns to directly engage enemy machine-gun positions and to provide ongoing support to the advancing infantry, the use of natural cover to allow attacking forces to reposition themselves for more advantageous assaults, as well as specific recommendations concerning the storming and clearing of trench systems. More official channels were also suggesting new ways for the infantry to come to grips with the enemy;



A German postcard from the summer of 1916 depicting a French artillery battery of de Bange 155mm M1877 guns that had been overrun by advancing German troops (possibly from 34. Infanterie-Division) at Verdun. Designed by the artillerist Colonel Charles Ragon de Bange to be a stationary siege piece for use against or in defence of major fortifications, the de Bange 155mm M1877 gun (and the de Bange 155mm M1881 light siege howitzer, which fired the same shell) proved to be a versatile and important part of the French heavy artillery. Though obsolete by 1914, it would see extensive use, with many being pressed into service as divisional heavy artillery to make up for the dearth of large-calibre guns in the French Army at that time, with 470 M1877 guns and 320 M1881 howitzers serving in French armies in January 1916 (Gudmundsson 2016: 83). It could fire one round per minute, each shell weighing 40kg (propelled by a separate bagged charge) with an effective range of 12,700m (9,000m for the M1881 howitzer). (German postcard/ Wikimedia/Public Domain)



hard-learned lessons were included in a new guide on defensive tactics issued on 5 December 1915, complemented by one on offensive tactics issued on 26 January 1916. The French artillery arm also benefited from a better appreciation of flash-spotting and sound-ranging techniques that enabled them to map German artillery batteries, as well as improved communications and training for junior officers.

The artillery was long seen as a secondary arm, its only purpose to support the infantry in the latter's quest for victory. This ideology would have consequences, however, the most serious of which was the unbalancing of French artillery in favour of direct-fire field engagements, the sort of combats envisaged by an army that planned to do most of its fighting in encounter battles that would occur during sweeping offensive actions. At the start of the war the French Army had 81 artillery regiments, most of which were armed with the quick-firing Canon de 75 M1897 field gun. Truly the best in its class, the 'French 75' was capable of firing six rounds per minute (15–30 in an emergency), with three four-gun batteries able to saturate 12 hectares of ground with 100 shells in under a minute (Clayton 2005: 21). Excellent though it was, the '75' had a flat trajectory and a relatively short range, factors that mitigated against it when an enemy was well-dug in or not in direct line of sight. The heavy-artillery batteries (155mm, 120mm and 105mm pieces) were not available in anything like the numbers they needed to be (less than 10 per cent of the total artillery batteries available in 1914), and certainly not when compared with the several thousand heavy pieces the German Army had at the dawn of the war. The French Army's failure to build up a strong heavy-artillery force was partly down to the perceived ineffectiveness of artillery shells against fortifications, partly down to underdeveloped doctrine – for example, the French hadn't worked out an effective system for the accurate spotting of long-range gunnery, unlike the Germans who made the most of air observation by balloon facilitated by telephone systems – and partly down to confusion over which was the best heavy gun to select, a situation exacerbated by political instability and Army infighting.

Pressures on manpower meant that in 1916 a line-infantry battalion's fourth company was withdrawn to help form a divisional depot, but infantry

OPPOSITE

The Kar 98AZ was the carbine version of the Gew 98 service rifle. It was chambered for the same 7.92×57mm Mauser round as the Gew 98, but as it was only 1,090mm long (as opposed to the Gew 98's 1,250mm) it was notable for its strong recoil and excessive muzzle flash. The 'AZ' suffix stood for *Aufpflanz-und-Zusammensetzvorrichtung* ('with bayonet attachment and stacking rod'). (Courtesy US National Park Service, Springfield Armory Historic Site, SPAR 4287)

firepower increased: each regiment would now field three machine-gun companies (one per battalion – quite an improvement when compared to the allocation of two machine-gun sections to each regiment at the start of the war), while within a rifle company platoon two of the four rifle squads each gained a pair of Vivien-Bessières rifle grenade launchers; the other two squads were converted, one into a bombing squad and the other into an automatic-rifle squad armed with a CSRG Chauchat. The Vivien-Bessières rifle grenade launcher had a range of 170m while the Chauchat, a weapon designed to support troops on the offensive, proved adept in the defensive role as well, its ability to lay down quick bursts of fire making it a valuable supplement to the rather more unwieldy Hotchkiss and Saint-Étienne heavy machine guns. In addition, hand grenades were much more commonly issued and carried, especially the 1916 Billant F1 model, which proved essential in the close-quarter fighting that characterized struggles over trench systems. Further support came in the form of the 58mm second-pattern trench mortar which appeared during 1915, a reliable weapon that fired a 20kg charge out to a range of 1,200m and gave front-line infantry the means with which to bring down fire on surprise attacks or on enemy trench mortars.

German

For *Stoßtruppen*, the main tactical unit was now the squad as opposed to the platoon. For such a small force to operate effectively it had to have good leadership as well as firepower tailored to its expected role. *Stoßstrupptaktik* ('shock troop tactics') relied on the utilization of close-combat weapons such as pistols and hand grenades, as well as newer weapon systems that maximized the effectiveness of the attacking units: machine guns, flamethrowers, trench mortars and infantry guns were all necessary to ensure that attacking *Stoßtruppen* could reach and then overwhelm the defenders of the enemy trench. The element of surprise was highly valued, and usually relied on the speed of the attack, which was often preceded by little or no artillery preparation. Though the nature of the attack varied according to circumstances, Rohr committed many of the basic elements to a training manual, *Anweisung für die Ausbildung beim Sturm-Bataillon* ('Instructions for the Training of an Assault Battalion'), that he published on 27 May 1916. Squads of *Stoßtruppen*, each 4–8 men strong and commanded by an NCO, would be attached to infantry battalions or regiments, their job being to lead platoons or companies in attacks on enemy trenches.

Prior to the attack, strong and detailed reconnaissance was crucial in determining the layout of the enemy position as well as its weak points, allowing for the formulation of detailed plans as well as the effective rehearsal of the final attack, sometimes against purpose-built mock-ups of the target. When the time came for the actual attack the *Stoßtruppen* would all leave their trenches at the same time, advancing in open order to allow the unit to present a less attractive target. It was necessary to move as quickly as possible through no-man's land, with the flamethrower units (if attached) trailing closely behind; supporting infantry would follow in their wake. The section of enemy trench to be attacked would be taken under direct fire from the *Infanteriegeschütze* (targeting machine-gun nests, strongpoints





This soldier, selected from Infanterie-Regiment 87 and specially trained in assault tactics, advances on a French position, preparing to throw a hand grenade. One of around 20 picked men from his battalion, he has trained (along with *Pioniere* specializing in breaching obstacles, launching hand-grenade attacks and using flamethrowers) for this specific battle, rehearsing assaults on mock-ups of the French positions time and again. The battle has only been under way for a little over a day, but he is already worn and dirty from operating in such an intense environment.

Bois des Caures, 22 February 1916



Weapons, dress and equipment

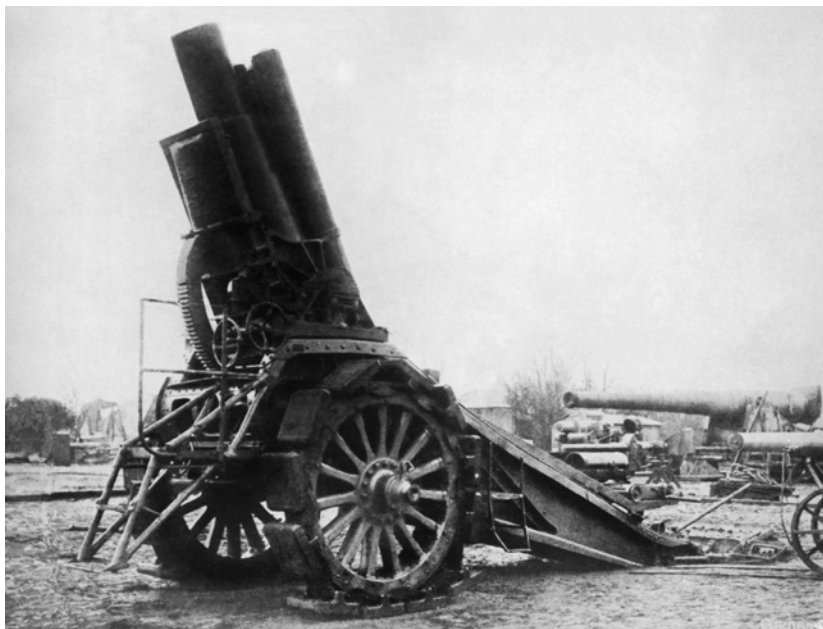
His primary weapon is the M15 Stielhandgranate (1), armed with a 5½-second fuze; more are carried in a pair of converted sandbags slung around his neck (2). His rifle (3), slung on his back to keep it out of the way in close-quarter fighting, is a 7.92×57mm Kar 98AZ, a shorter variant of the Gew 98.

He wears the newly issued 'square-dipped visor' M1916 Stahlhelm ('steel helmet'; 4) that was initially only distributed to *Pioniere* and assault troops and an M1910 Feldrock ('field tunic'; 5) with tombak (a type of brass alloy) buttons and shoulder straps piped light blue that bear his unit number – '87'. His M1907/14 Hosen ('trousers'; 6) are piped (though piping was often omitted due to the pressures of wartime production) and coloured stone grey. Instead of jackboots he

wears the less restrictive Gamaschen ('puttees'; 7) and brown hobnailed M1914 Schnurschuhe ('ankle boots'; 8).

He is equipped with an M1895 Koppel and Koppelschloß ('belt and buckle'; 9), and a Patronentragegurte ('ammunition bandolier'; 10) holding 70 rounds for his carbine. He also carries an M1887 Schanzzeug and M1909 Schanzzeugtasche ('entrenching tool and carrier') and M1898/05 bayonet (11) with a steel scabbard (replacing the more frail leather version from 1915 onwards), plus an M1887 Brotbeutel ('bread bag') for provisions with an M1907 Feldflasche ('field flask'; 12) made from aluminium with a cork stopper and an M1915 Gasschutzmaske in a canvas carrier (13).

A 28cm Haubitze L/14 howitzer on *Räderlafette* ('wheeled carriage') photographed on 28 September 1914. Only a single prototype of this howitzer was made as it was considered too small to be an effective siege gun (the even more imposing 38cm and 42cm weapons being preferred), but it went on to serve through several campaigns on the Eastern Front during 1916 before transferring to the West for use at Verdun. It could fire one 285kg shell out to a maximum range of 9.7km every two minutes. (Underwood Archives/Getty Images)



or enemy artillery pieces), with machine guns guarding the flanks of the advance, while trench mortars and a segment of artillery would pound the trench line to keep enemy riflemen down. The remaining artillery would cut off the enemy position with a box barrage, as well as suppress enemy artillery batteries and mustering points for reinforcements (Gudmundsson 1995: 85–86).

At a predetermined point the box barrage would lift and the *Stoßtruppen* would shower the trench with hand grenades and then enter it immediately (ideally at multiple points), engaging in close combat with the defenders and rolling up the whole position along its width as quickly as possible. If flamethrowers were present, they would be used to clear trench sections as well as deal with bunkers or other strongpoints. The requirements of close combat meant a diminished role for the long rifle which was now a secondary weapon, with pistols, other hand-to-hand weapons and especially hand grenades – usually the M15 Stielhandgranate for its stunning blast rather than other shrapnel-based explosives – being the most important weapons employed. The trench would be cleared by bombing teams, with any remaining pockets of resistance blocked off until the arrival of the infantry who would relieve the *Stoßtruppen* and rebuild the trench to face the enemy, ready to receive the inevitable counter-attack.

Through a mix of detailed reconnaissance, the local concentration of firepower and the practice of close combat, German *Stoßtruppen* developed a workable system for delivering tactical breakthroughs. Though the system was seemingly revolutionary in nature, Ralf Rath points out that it had its origins in pre-war tactical thinking, notably in four particular aspects – the efforts to strengthen the squad, the specialized role of NCOs, the importance of methodical preparation and the promotion of fire superiority; only the move away from the rifle and towards close-combat weapons had not been anticipated (Raths 2009: 169).

COMMUNICATIONS

French

The TM 09 (poste téléphonique modèle 1909) was the first of the French portable telephones, with the mechanism and handset all contained within a wooden box that was carried in a leather satchel. The TM 09 was primarily intended to be used in conjunction with civilian telecommunications networks and was rather scarce within the French Army prior to the outbreak of World War I. The obvious need for communications was made up in part by use of the Marty 1910, a civilian telephone model that was only suitable for fixed positions; for troops on the move the new TM 09-15 (and later TM 16) was soon being issued. The TM 09-15 followed a similar pattern to the TM 09 in terms of its design, weighing 7kg but with a folding handset to make for easier stowage. Though the connection offered by such telephone systems was far from perfect, it was a considerable advance on the use of signal flags or flares.

Telephone systems such as the TM 09-15 (and its German counterparts) could be established in forward positions and outposts, but their use was always at the mercy of their cables, the connections often being cut during artillery bombardment and which proved time-consuming and often highly dangerous to repair. The same problems beset field telephones carried along during an advance, but even more so as the cable that was laid in the wake of an attack wasn't usually buried and thus was even more susceptible to the ravages of enemy artillery fire. Traditional systems of communication, including runners, signal flags and flares were commonplace, as were carrier pigeons, notably at Fort Vaux.



A French officer at a telephonic post in trench 342 in 1916. He is likely using the TM (*téléphonique modèle*) 09-15, an evolution of the pre-war TM 09 that was primarily intended to be used in conjunction with existing civilian telephone networks. The TM 09-15 was manufactured in great numbers starting soon after the outbreak of World War I, when France found itself at a severe disadvantage where battlefield communications were concerned. (Roger Viollet via Getty Images)

A pair of German soldiers using a field telephone, likely a Feldfernsprecher 16, photographed sometime in 1917. The German Army led the way in field telecommunications at the outset of World War I, but the reality of dependence on telephone cable meant that, while rear areas could rely on consistent communications, for units paying out cable as they advanced under enemy artillery fire, keeping in touch was a much more haphazard affair. (Willi Ruge/ullstein bild via Getty Images)



German

The German Army was keen to adopt modern telecommunications technologies, but was poorly served at the outset of the war. Radio transmitters were scarce, and there wasn't a well-established infrastructure to allow the timely construction of telegraph systems to serve mobile armies and corps. Two-way radio communication, really still in its infancy, had been used in the Russo-Japanese War (1904–05) but had not progressed much since then, and wasn't applicable to field operations below divisional level. In defensive situations the telephone networks, though generally reliable and robust, were susceptible to being tapped, while wireless transmissions could be intercepted or jammed.

Fixed positions such as those occupied by corps or divisional headquarters relied on telephone networks equipped with the Tischfernsprecher OB 05 ('Table telephone') or its variants, connected to various models of *Klappenschränke* ('flap cupboards') that acted as telephone exchanges. The Streckenfernsprecher M15 ('Route Telephone') weighed only 3.5kg and was specifically designed for telegraph construction crews, though it likely saw much wider adoption, whereas the Feldfernsprecher 16 ('Field Telephone') was intended for front-line combat use. The M16 wooden box, which weighed 8.7kg and was carried by means of a leather shoulder strap, contained the receiver/transmitter and the operator's handset, while the case also offered a fold-out button for Morse code transmissions, and also had an aperture to allow hand-cranking of the magneto to generate an electrical charge (the crank handle being included in the box as well).

Other systems included *Blinken* ('lamp signalling'), with small, medium and large lamps having a range of 800m, 3,000m and 6,000m respectively (the smallest lamp usually being found at the battalion level). Coloured signal flares with predetermined meanings could be fired from flare pistols or a *Signalwerfer* ('signal projector'), allowing an attacking force to indicate its status or to summon artillery support quickly. Carrier pigeons were common and were organized on a corps basis, with dogs also proving popular, to the extent that special gas masks were developed for them in 1915 (Stone 2015: 309–14).

OPPOSITE BOTTOM

Général d'armée Philippe Pétain became synonymous with the French will to resist the German onslaught, earning him the sobriquet 'The Lion of Verdun'. Though he would be replaced by Général d'armée Robert Nivelle in May 1916, it was Pétain who established the pattern of French resistance; he was genuinely solicitous of the soldiers under his command, earning their trust and loyalty in a way few other French generals could manage. (Library of Congress)

LEADERSHIP

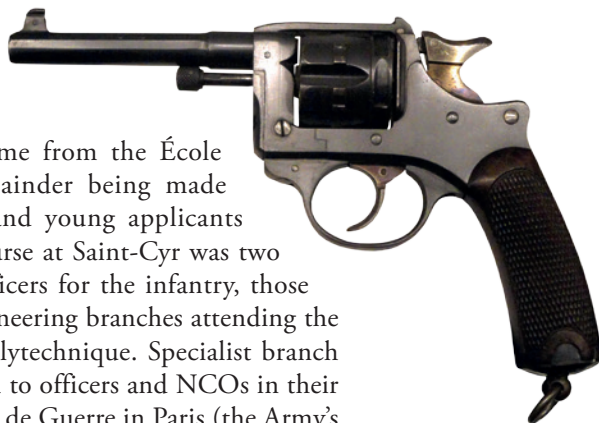
French

Around half of French Army officers came from the École Spéciale Militaire at Saint-Cyr, the remainder being made up of senior NCOs, reserve subalterns and young applicants from the major technical colleges. The course at Saint-Cyr was two years long and was the main source of officers for the infantry, those wishing to specialize in the artillery or engineering branches attending the more academically rigorous Paris École Polytechnique. Specialist branch schools existed to provide further education to officers and NCOs in their respective fields, while the École Supérieure de Guerre in Paris (the Army's staff college) admitted a select number of junior officers under the age of 37 for a two-year staff training course. From 1910 the École Supérieure de Guerre also offered a ten-month course for more senior officers (*majors* and *lieutenant-colonels*) covering the intricacies of army and army-group operations (Clayton 2005: 238). Despite such educational opportunities, most officers rarely had the chance to put their lessons into practice as a lack of money and training facilities resulted in major exercises being a less than common occurrence. When major exercises did occur they were dominated by the senior men of the Army, most of whom were past 60 years of age and well beyond their prime; German observations of the large French Army manoeuvres conducted in 1908 and 1911 noted how timid and lacking in any spark of initiative the French units seemed to be.

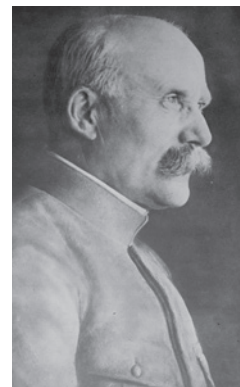
One irony was that social mobility caused a shortage of good NCOs. The idea of promotion from within the ranks had been more or less constant since the time of Napoleon I, and a significant number of NCOs only served a short period before being selected for officer training; however egalitarian such moves might appear, the reality was that there was a constant shortage of junior officers in both the active and reserve armies, so promoting NCOs was one way of filling the gap. The long-term consequence of such a system was that the French Army had no established cadre of long-serving NCOs within whom the professional standards of the institution could reside. In both the British and German armies commissioning from the ranks was much rarer, but the result was the development of a system of non-commissioned and warrant officers that commanded the respect of their peers and their superiors as well. With the French Army the best *sergents* were creamed off, leaving young and inexperienced conscript NCOs and professionals who lacked the qualities to become officers. For instance, 74 per cent of artillery *sous-lieutenants* in 1910 were ex-NCOs (Porch 2003: 205).

German

There were two ways for a candidate to gain a commission once he had completed his secondary education: as a *Kadett* ('cadet') or *Fahnenjunker* ('probationer'). The *Kadett* would spend 2½ years at a *Kriegsschule* ('military academy') in his army corps military district, after which he



An image of one of the most common French officer's sidearms of the war, the 8mm M1892 double-action revolver, also known as the 'Lebel' after Lieutenant-colonel Nicolas Lebel, the designer of the M1886 rifle, though his connection with the development of the pistol is apocryphal. Produced in great numbers, the M1892 held six rounds of relatively low-powered 8×27mmR ammunition, comparable in bullet weight and velocity to the Browning .32 ACP round. The weapon was primarily designed as an officer's service pistol and was widely issued in the years prior to, during and after World War I, during which its robust design and high quality of manufacture proved their worth. (Daderot/Wikimedia/Public Domain)





General der Infanterie Erich von Falkenhayn was the man responsible for the Verdun campaign. Though a highly capable officer, he did not have an established network within the General Staff and even his few loyal subordinates rarely felt they fully understood his thinking, something that translated to his commanders in the field obeying the letter of his orders rather than their larger objectives. (Library of Congress)

would sit an examination; a *Kadett* who passed with high marks received a commission as a *Leutnant* and was sent to join his regiment, those with lower scores being appointed *Fähnrich* ('ensign') and held back for a further nine months' training at the *Kriegsschule*, eventually being made temporary *Leutnants* and sent to their regiments. The *Fahnenjunker* would either sit the same examination as the *Kadett* or be eligible for a commission due to his high academic achievements. In both cases the *Fahnenjunker* (assuming he was at least 17 years of age and a fit, unmarried, debt-free German citizen) would then join his chosen regiment as a private soldier, with promotion to *Gefreiter* within three months; after a further three months of good behaviour he would be sent on a nine-month course at the local *Kriegsschule*, returning as a *Fähnrich* and eventually earning promotion to *Leutnant*. One might also join the reserves as a one-year volunteer, something that could lead in due course to a commission as an *Offizier der Reserve*. There was also a route for NCOs to gain a commission, though it was rather narrow and rarely let men rise above the command of a platoon (Stone 2015: 162–67).

Small-unit leadership in the field was the province of just such young officers and their NCOs, most of whom would have been promoted from the ranks, but around 25 per cent of whom would be graduates of dedicated *Unteroffizier-Schulen* ('NCO schools'). The German habit of letting subordinates fulfil their orders however they best saw fit (*Auftragstaktik*, 'mission-oriented tactics') encouraged responsibility and initiative among young officers and NCOs, something further enhanced by the habit of German formations often being commanded by more junior-ranking men than would be the case in other armies. These were exactly the sort of circumstances that helped to develop the thinking behind *Stoßtrupptaktik*, in which personal responsibility, initiative and adaptability in the face of seemingly intractable problems led to breakthroughs, at first theoretical and then practical.



Bois des Caures

21–22 February 1916

BACKGROUND TO BATTLE

At the outbreak of World War I the nest of fortresses that surrounded Verdun made it one of the strongest sites in all of France, protected by a garrison of 66,000 men and dozens of artillery batteries (Holstein 2009: 18). Little more than a year and a half later it would be a shadow of its former self, most of the men having been drawn off for one duty or another in a French Army running short of manpower, and the artillery batteries broken down and sent away in penny-packets to other sections of the front that were deemed more important. Despite its perception as a secondary ‘quiet’ sector, by the end of December 1915 it was becoming clear that the German lines, surrounding Verdun on three sides, were the subject of a worrying increase in activity. As the year turned there were further ominous reports of extensive new German fieldworks being undertaken, the transfer of heavy guns and elite divisions from other fronts, and an increase in railway traffic that was so extensive it was impossible to conceal (Brown 2000: 35–36).

In the face of such a growing threat the requests of Général de division Frédéric-Georges Herr (commandant of the fortified region of Verdun) as well as other local commanders like the impolitic Lieutenant-colonel Émile Driant were straightforward enough: more men and equipment with which to improve the defences. Verdun’s forts had fallen from favour and were no longer regarded as the keystones of the region’s protection, but a comprehensive and well-built system of trenches, such as existed on other sectors of the front, had not been constructed in place of the old fortifications. Instead, a series of rather ad hoc fieldworks had been started: the 1st Position, expected to bear the brunt of any attack, consisted of a series of trenches, strongpoints and earthworks that were set up in the vanguard of the fortress chain, right on

OPPOSITE BOTTOM

A Lange Pistole 08, also known as the Artillery Luger as it was for that branch of the German Army that it was primarily intended, its wooden holster doubling as a stock and creating a pistol-calibre carbine. Chambered in 9×19mm Parabellum and with a 200mm barrel (twice the length of the standard Luger’s barrel), it became, along with the M1916 ‘Red 9’ variant of the Mauser C 96, one of the popular sidearms carried by *Stoßtruppen*, particularly when the 32-round *Trommelmagazin* (‘drum magazine’) was developed in 1916. (Collection of Auckland Museum Tamaki Paenga Hira, 1929.334, W1097.2/ Wikimedia/CC BY 4.0)



A portrait of Lieutenant-colonel Émile Driant, commander of the 56^e and 59^e bataillons de chasseurs à pied in the struggle for the Bois des Caures during the first two days of the battle of Verdun. Driant, nearing 61 years of age at the time of the battle, was an energetic and thoughtful officer whose military career had stalled as a result of his political leanings. Called back to the colours at the outbreak of World War I, he was posted to Verdun and subsequently given responsibility for the Bois des Caures, a crucial sector of the line. Communicating through political back-channels, he was withering in his condemnation of the defences there, noting basic issues like the shortage of wire for entanglements, as well as the desperate lack of necessary manpower that would be needed to improve the overall situation. Some notice was taken, mostly of the temerity Driant had shown in circumventing the chain of command, but little was done. (Émile Driant/Wikimedia Commons/Public Domain)

the front line; the 2nd Position, a stronger network that was designed around more easily defensible ground, was established further back. Both the 1st and 2nd positions were poorly constructed and incomplete. The requests for help shoring up Verdun's defences were received by the Grand Quartier général (GQG, 'General Headquarters') with a greater degree of relaxation than the situation warranted, at least in part because Généralissime Joseph Joffre, the commander of all French forces, had declared the Verdun sector a backwater and did not wish to come to terms with the fact that he might have to perform a volte-face.

General der Infanterie Falkenhayn's plan was to attack the French positions on the eastern (right) bank of the River Meuse, crushing all initial resistance with an artillery bombardment of hitherto-unparalleled intensity and weight. His infantry divisions would then move through the destroyed French lines, taking the Meuse Heights and establishing an excellent defensive position that posed an immediate threat to the city of Verdun. The French, in range of the German artillery batteries that would have established themselves on the heights, would be forced to commit their main reserve strength if they wished to throw the Germans back. Such an operation against a well-fortified position on high ground supported by over a thousand artillery pieces was what Falkenhayn sought, the sort of battle that would bleed the French Army white, in his fateful phrase.

Falkenhayn's approach to the battle relied on the overwhelming employment of artillery to suppress the French guns, isolate and batter the defenders, and allow limited contingents of infantry to advance in the immediate wake of the artillery barrage and seize enemy ground with relatively little loss of men. The Germans had a far greater concentration of guns than the French – guns that were more modern, of larger calibre and which used more effective shells. A total of 1,201 artillery pieces and 200 mortars had been assembled for the opening phase of the battle; a third of the artillery pieces were lighter guns (7.7cm or 10.5cm), with the rest ranging from 15cm up to 42cm. In comparison the French had 632 artillery pieces at their disposal (388 field guns and 244 heavy guns, many of the latter verging on obsolescence). German orders for their artillery units after the initial attack stressed that it was critically important that the defenders across the whole battlefield were subjected to continual bombardment (Foley 2005: 214), including harassing fire throughout the night and the concentration of fire from long-range guns on expected French assembly points.

The German attack was broken down into three sectors: Sector A (the right, the Bois de Consenvoye, Haumont village and the Bois d'Haumont) was the responsibility of VII. Reservekorps (Generalleutnant Johann von Zwehl); Sector B (the centre, the Bois des Caures) was the target for XVIII. Armeekorps (General der Infanterie Kuno Dedo von Schenck); and Sector C (the left, the Bois de Ville and the Bois d'Herbebois) was the target for III. Armeekorps (General der Infanterie Ewald von Lochow). The assault on the Bois des Caures – the heart of the German attack – would be led by units from 21. Infanterie-Division (Generalleutnant Ernst von Oven) and the Hessians of 25. Infanterie-Division (Generalleutnant Viktor Kühne).

The units from 21. Infanterie-Division consisted of elements of Infanterie-Regiment 81 (I. and II. Bataillone) and Infanterie-Regiment 87



(I. Bataillon and half of III. Bataillon). From 25. Infanterie-Division the lead unit was Leibgarde-Infanterie-Regiment 115 (I. and II. Bataillone). Each infantry battalion had sections of specially trained *Stoßtruppen* drawn from its ranks, supported by *Pioniere* and flamethrower teams: Infanterie-Regiment 81's *Stoßtruppen* would be supported by 3. Kompanie, Pionier-Regiment 30; Infanterie-Regiment 87's *Stoßtruppen* would be supported by 5. Kompanie, Pionier-Regiment 21; and flamethrower teams, supplied by 9. Kompanie, III. Garde-Pionier-Bataillon, would operate in support of both infantry regiments. Infanterie-Regiment 115's *Stoßtruppen* were supported by Reserve-Pionier-Kompanie 89 and 3. Kompanie, Pionier-Bataillon 21 (for I. and II. Bataillone respectively), with flamethrower teams supplied by the Reserve-Kompanie, III. Garde-Pionier-Bataillon (Wictor 2012: 83). The assault on the Bois des Caures would also enjoy the dedicated support of 40 heavy-artillery batteries, seven field-artillery batteries from 21. Feldartillerie-Brigade and 50 *Minenwerfer*; a total of 230 guns.

The French line consisted of the 72^e and 51^e divisions d'infanterie. The 72^e DI (Général de division Étienne André Bapst) held the western section running from the River Meuse to the road of Ville-devant-Chaumont: the division's 143^e Brigade d'infanterie (Colonel Vaulet) was positioned to the right and had two battalions (the 165^e and 362^e régiments d'infanterie) in the Bois d'Haumont, with Lieutenant-colonel Émile Drian's *chasseurs* (1,300 men of the 56^e and 59^e bataillons de chasseurs à pied) in the Bois des Caures. To the east the 51^e DI held the line between the road and the Bois de Maucourt: the division's left flank was held by a battalion of the 164^e Régiment d'infanterie in the Bois de Ville while the right was held by a reinforced battalion (164^e RI and two companies of the 243^e RI) in the Bois d'Herbebois.

A group of German infantry photographed after being dug out of their collapsed bunker, a result of French artillery fire near Fort Souville, Verdun, 1916. Great efforts had been made in the construction of the large *Stollen* ('bunkers') that would hide the first waves of German infantry prior to the battle, but the poor weather that led to the initial postponement of the attack on 12 February also flooded several of the large German dugouts, making them desperately inhospitable places in which the men had to wait. (ullstein bild/ullstein bild via Getty Images)

Attack on the Bois des Caures, 21–22 February 1916

- 1 0700hrs, 21 February:** The German artillery bombardment starts, eventually shattering many of Lieutenant-colonel Émile Driant's defences within the Bois des Caures, but not doing enough damage to destroy the position entirely.
- 2 1600hrs, 21 February:** The main German assault begins, with all three corps attacking along the entire front of the eastern (right) bank of the River Meuse. Driant summons his reserve unit, the 56^e BCP.
- 3 1600hrs-c.2100hrs, 21 February:** The German advance is tentative, failing to make any major gains with the exception

of Reserve-Infanterie-Regiment 39, which captures the Bois d'Haumont.

- 4 1200hrs, 22 February:** A much stronger German assault is launched against the Bois des Caures. The French *chasseur* companies are gradually destroyed while strong German forces outflank Driant's position on both the west and the east of the Bois de Caures.

- 5 c.1630hrs, 22 February:** Realizing that his position is hopeless, Driant orders the remnants of his two battalions to retreat towards Beaumont. Driant and both his battalion commanders are killed during the retreat.

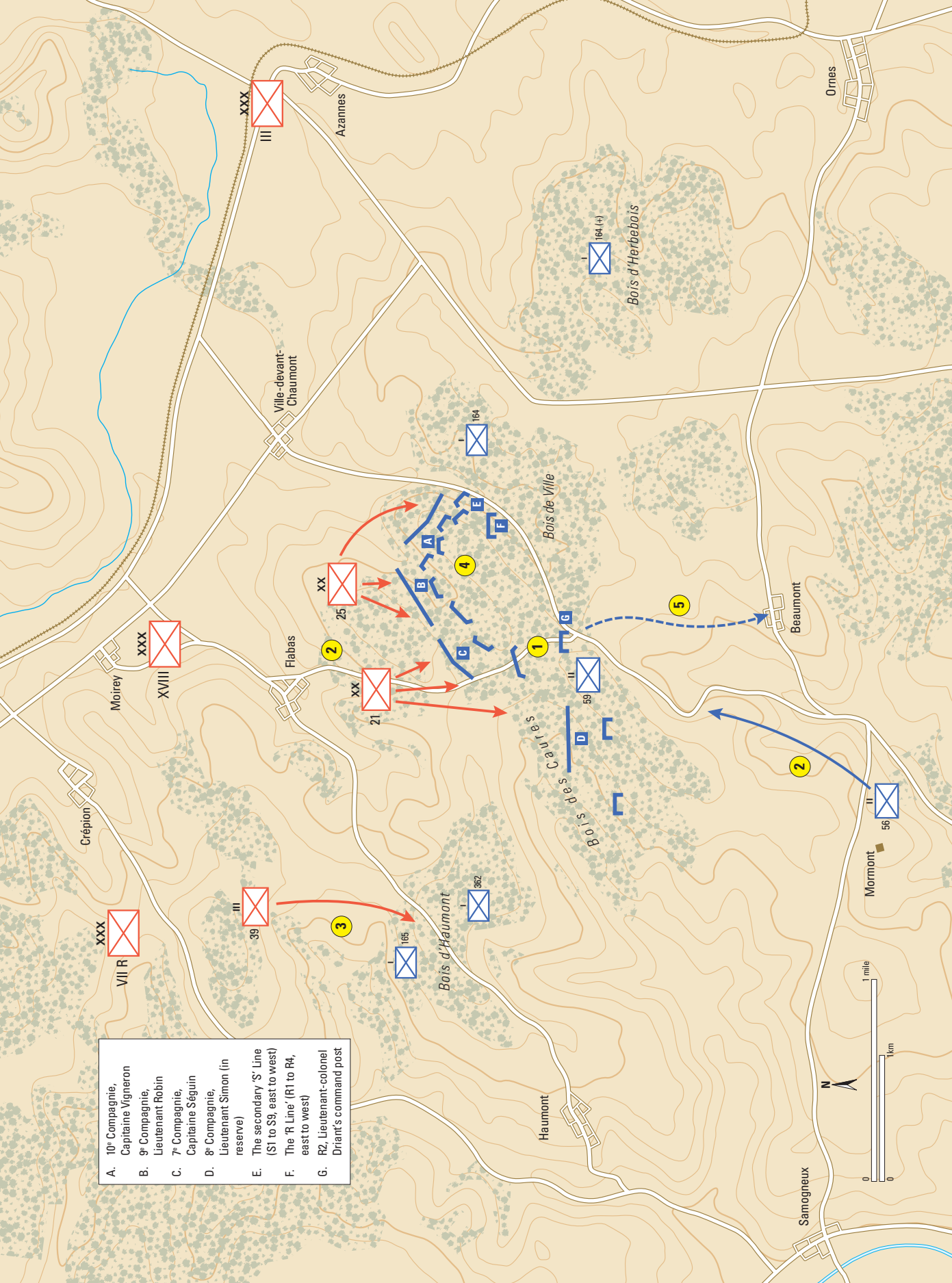
Battlefield environment

Some 3km wide and 800m deep, the Bois des Caures was the northernmost position of the Verdun front on the eastern bank of the River Meuse, resting on a slight rise of ground that was oriented from the south-west to north-east. The opposing German trenches were very close, roughly mirroring the French line in the woods to the immediate north that screened the village of Flabas. The French position was three lines deep, consisting of a forward line of isolated trenches protected by a continuous belt of barbed wire, a main line of resistance a little further back made up of a series of fortified positions

(numbered S1, S2, etc.), and a final fallback position known as the 'R Line'. The site was flanked by the Bois d'Haumont to the west and the Bois de Ville and the Bois d'Herbebois to the east; the designated reserve position was further to the rear in Samogneux. The main route through the area was the road coming up from Verdun; it branched just to the south of the Bois des Caures, the left fork cutting through the wood and heading north to Flabas, while the right fork looped around the eastern edge of the French position before heading north-east to Ville-devant-Chaumont.

A company of French *zouaves* photographed in the Bois des Caures (from *L'Illustrazione Italiana*, Year XLIII, No. 12, 19 March 1916). The image gives a sense of the rather ad hoc nature of some of the French positions in the wood, as well as the close nature of the environment which could hamper movement and lines of sight. Much of the protective concealment provided by the trees would be destroyed in the first few hours of the battle, the result of one of the most intense artillery bombardments yet seen in World War I. (DeAgostini/Getty Images)





INTO COMBAT

The first day's artillery bombardment would see an estimated 80,000 shells fall on the Bois des Caures alone, the German artillery pieces guided onto target by artillery observers in six observation balloons set around the front, protected by swarms of fighter aircraft. An unnamed officer from the 59^e BCP present during the battle gave an account soon afterwards, noting the intensity of the bombardment:

We had been in occupation of our trenches for four days when the Germans began to prepare their attack on the morning of the 21st, about seven o'clock ... One of our battalions was in line, while the other was in reserve round the Mormont farm [by Samogneux]. The general alarm was immediately given. The shelling began ... with an extraordinary intensity ... We could do nothing but wait for the tempest to pass, but this time it was not a tempest but a deluge. Our deepest dug-outs were destroyed. About eleven o'clock in the morning our greatest stronghold was blown in by shells and an officer and fourteen men were buried in the debris. (Quoted in Dugard 1917: 120–21)

Their comrades managed to dig out nine of the men, while working parties did their best to strengthen the wood's defences despite the shellfire.

An officer of the 243^e RI, H. Hovine, was just to the west of Champeaux in the Bois de Wavrille and also endured the German *Trommelfeuer* ('drum fire') that day, observing that what had been woodland that morning looked like the timber yard of a sawmill by 1500hrs in the afternoon (Brown 2000: 46). Numerous trenches, strongpoints, medical dugouts, communication trenches and company command posts were all hit in the artillery barrage, many of them reduced to a ruinous shambles that made any sort of effective command and control almost impossible. By 0800hrs the vast majority of regimental- and brigade-level telephone communications with the front had been severed, leaving most units no option but to shelter in place and endure

An annotated image showing three *Wellen* ('waves') of German infantry from Reserve-Infanterie-Regiment 39 conducting an attack towards the Bois d'Haumont defended by two battalions from Colonel Vaulet's 143^e Brigade d'infanterie during the first day of the battle of Verdun, 21 February 1916. All three waves are advancing in widely dispersed *Schwarmlinien* ('swarm lines'), far more open than the regular skirmish order, consistent with the costly lessons learnt over the past 18 months of warfare. Note also that the men of the third wave wear the leather *Pickelhaube* ('pointed bonnet') – the *Stahlhelm* ('steel helmet') was issued only to *Stoßtruppen* at this stage of the battle – with canvas covers and their spikes removed, as per the latest instructions for troops in the front line. (Courtesy of Brett Butterworth)





the maelstrom. Caporal Maurice Brassard and his squad of five men from the 56^e BCP were typical, enduring the shelling as best they could but still suffering debilitating casualties, two men being buried alive and two more wounded (Brown 2000: 47).

At midday the bombardment suddenly lifted. Fearing a sudden attack by waves of German infantry, the *chasseurs* emerged from their dugouts to man the trenches and strongpoints, and in so doing gave away their positions to the German artillery observers in their balloons; the French positions were mapped and then quickly engaged by heavy-mortar batteries, while the 21cm howitzers that had been battering the front lines all morning committed themselves to new targets deeper in the wood (Horne 1964: 74). The rain of German artillery shells continued to fall all along the Verdun line, from the western (left) bank of the River Meuse across to the eastern bank, increasing in intensity wherever the German infantry were due to attack; to the right of Driant and the Bois des Caures, the men of the 51^e DI were faring just as badly, with *c.*40 heavy-calibre shells landing on their positions every minute. One of the division's brigade commanders attempted to set up a system of relay runners to replace the destroyed telephone system (with each man expected to cover a distance of 300m), but the continuing intensity of the bombardment meant that such attempts at re-establishing communications would be temporary at best, and likely to cost many lives.

In reply the French artillery batteries, already vastly outmatched in both quantity and calibre by their German counterparts, could do little. The first German salvoes directed at them had been made up of gas shells, throwing the French positions into confusion. Further counter-battery fire was 'walked' on to the French guns by the airborne German artillery observers, knocking out dozens of artillery pieces and the men who served them; the few guns that were still firing were doing so blind, as the French had no effective artillery spotting system in place.

By 1600hrs the hammering rain of shellfire suddenly relented once again, this time signalling the imminent attack of the German infantry. When the attack came, however, the German assault on the Bois des Caures was not what the French had expected, or Driant initially feared. Rather than an overwhelming wall of grey-clad men bristling with bayonets, the first lines were made up of scattered groups of widely dispersed men, what the Germans termed a *Schwarmlinie* ('swarm line'), approaching the northernmost part of the French position defended by Lieutenant Robin's 9^e Compagnie, 59^e BCP. Consistent with Falkenhayn's desire to keep casualties to a minimum (as well as the evolving doctrine of how infantry ought to manoeuvre when advancing on the enemy), the troops in the first German wave were in fact strong scouting parties sent out to determine the

The Saint-Étienne M1907 machine gun. Designed some years after the Hotchkiss machine gun as a 'nationally' manufactured weapon (the Hotchkiss was developed as a private concern rather than by one of the three French arsenals), the Saint-Étienne was chambered for the 8x50mmR Lebel round and was fed by 25-round metal strips (or in some cases by 300-round canvas belts from 1916), with an effective range of 2,000–2,500m. Mechanically, it differed from the Hotchkiss in using the 'Bang' blow-forward piston method of operation, and it also had an adjustable rate of fire (60–600rd/min), though how effective or necessary that feature was is debatable. Despite being a finely made weapon, it required a lot of maintenance from knowledgeable operators and proved inadequate when confronted with the rigours of hard front-line use; from 1917 it was gradually withdrawn in favour of the Hotchkiss M1914, a more widely used and much more robust machine gun. (Courtesy US National Park Service, Springfield Armory Historic Site, SPAR 2869)



A French 'Poilu' ('hairy one'; soldier) huddles against the wall of a trench near the River Meuse, his M1886/93 Lebel service rifle propped near him as he tries to get some sleep, using his backpack as a pillow. During the battle, French infantry units could expect to be on the line continuously for around 15 days at a time, irrespective of the weather or enemy activity. Trenches, often poorly dug in the first place, were soon degraded by shelling, with the result that many men were forced to live, fight and sleep in the open air. During such periods of service even the most basic aspects of life, including meals and sanitary affairs, were subject to the whims of environment and circumstance, making it difficult to establish or stick to any sort of routine. (Albert Harlingue/Roger Viollet via Getty Images)

most advantageous parts of the French line upon which succeeding waves should concentrate their focus.

After the *Schwarmlinie* came elements of the German infantry battalions, the leading companies of which had groups of *Stoßtruppen* (16–20 men each) in the vanguard, supported by *Pioniere* and flamethrower teams (three per battalion), as well as machine-gun crews without weapons who were expected to seize and put back into service any captured French machine guns. Further support came in the form of trench mortars, machine-gun nests and *Sturmartillerie* (assault artillery), all used to protect the flanks of the attacking force as well as serving to help suppress French activity or strongpoints that had survived the preceding barrage. As the *Schwarmlinie* met resistance from Robin's position the *Stoßtruppen*, *Pioniere* and flamethrower team formed the *Sturmwelle* ('assault wave') and manoeuvred to attack the position from the flank, the following German infantry acting as the *Aufraumungswelle* ('clearing-out wave') and *Verstärkungswelle* ('strengthening wave').

The men of the *Schwarmlinie* had been somewhat surprised to be taken under fire as they closed with the first line of French trenches; the supposedly annihilatory artillery barrage had not destroyed all the French positions, nor had it killed all the *chasseurs*. The toll on French personnel and *matériel* had been terrible, but the 59^e BCP had endured the very worst that the German artillerists could deliver; now the *chasseurs* were laying down rifle fire and getting their surviving machine guns back into action. Driant emerged from his command post and immediately sent a runner to bring up the 56^e BCP in reserve at Mormont, and then set about organizing the defence as best he could. Two whole French platoons had been lost in bunkers that received

Édouard de Castelnau

Born in Saint-Affrique in southern France on 24 December 1851, Édouard de Castelnau came from a strongly Catholic noble family with a long history of military service. Highly intelligent and charismatic, Castelnau enlisted in the French Army and was made *sous-lieutenant* on 14 August 1870, joining the 31^e Régiment d'infanterie and serving in the Franco-Prussian War (1870–71). He attended the École Supérieure de Guerre in 1879, gaining command of a regiment in 1900 and a division in 1909. Despite being committed to the doctrine of *offensive à outrance*, his intelligence and experiences in the early stages of World War I allowed him to reformulate his tactics successfully, leading to victory in the defence of Nancy in September 1914 and his

promotion to the Grand Quartier général's (GQG, 'General Headquarters') chief of staff on 11 December 1915. It was in this role that he arrived at Verdun on 24 February 1916; rather than order a fighting retreat, he decided to shore up the buckling French line and recommended Pétain's appointment, thus committing the French Army to the defence of Verdun, much as Falkenhayn desired. Castelnau's star waned with Joffre's fall, however, and he saw out the war in a relatively quiet post, enjoying post-war careers in politics and publishing. After the fall of France in June 1940, he distanced himself from Pétain's circle, supporting the resistance movement and encouraging his grandchildren to join the Free French Forces. He died on 18 March 1944 at the age of 92.

direct hits, while a number of the concrete machine-gun positions had been atomized by the shelling, but enough men and defensive works remained to allow Driant's battalions to hold on.

Driant was quickly confronted with a runner bringing news from Lieutenant Robin: his men had manned their parapets as soon as the artillery barrage lifted, but a strong German contingent (perhaps 150 men in all) had infiltrated the flank of his position, forcing the 9^e Compagnie to withdraw. Robin's men established themselves in a prepared reserve position but soon found themselves in a fierce fight that degenerated into close combat conducted with grenades and bayonets. Robin's men held the Germans in front of them, but soon found both their flanks turned again by infiltration teams led by *Stoßtruppen*, forcing them to withdraw once more. Similar German flanking infiltrations had forced the right flank of Capitaine Séguin's 7^e Compagnie to pull back in disorder, potentially opening a large hole in the French line, but the combination of

Konstantin Schmidt von Knobelsdorf

The son of a Prussian Army major, Konstantin Schmidt von Knobelsdorf was born in Frankfurt on 13 December 1860. After time in the Kadettenkorps he was commissioned on 15 April 1878 as a *Leutnant* in Infanterie-Regiment 67; working his way up the ranks, he was promoted to *Major* on 1 April 1898, in which capacity he served as 2. Infanterie-Division's *Erster Generalstabsoffizier* (First General Staff Officer). A series of further appointments saw him rise by 1914 to the position of deputy chief of the General Staff with the rank of *Generalleutnant*; upon the outbreak of World War I he joined 5. Armee as its chief of staff, a position that held more actual power than that enjoyed by

5. Armee's nominal commander, Crown Prince Wilhelm of Prussia. In this role, Schmidt von Knobelsdorf was partly responsible for the disjunct between Falkenhayn's operational objectives and the tactics employed by 5. Armee's divisions: the disappointing progress of the first day's attack led Schmidt von Knobelsdorf to encourage his generals to press forward at all costs, starting the pattern that would see German losses rise inexorably. On 20 August 1916 he was given command of X. Armeekorps, serving on the Eastern and Western fronts and gaining his final promotion, *General der Infanterie*, just before the war's end. Retiring in 1919, he died on 1 September 1936 at the age of 75.

German soldiers pass by a dead body on the battlefield of Louvemont ahead of Verdun, spring 1916. For Falkenhayn's *Ermattungsstrategie* ('strategy of attrition') to work, his commanders needed to make full use of their artillery and specialist *Stoßtruppen* in order to spare the line infantry as much as possible, only using the latter to advance on positions that had already been thoroughly pulverized by the artillery units and infiltrated by *Stoßtruppen*. As the battle progressed, however, it became clear that many German officers were unwilling to adapt to such a measured approach, instead using their regiments of infantry in aggressive assaults that would soon see the number of German casualties inch ever closer to those of the French. (ullstein bild/ ullstein bild via Getty Images)

Driant rallying Séguin's fleeing *chasseurs* and the resilience of other units (often not more than individual squads) that fought almost to the last man saved the situation for the French (Horne 1964: 79–80).

To the east, the 51^e DI was enduring similar problems, the Germans in front of the defenders melting away as soon as any resistance was offered, only to appear on the flanks and continue with their attack. The men in one well-defended French strongpoint saw the Germans approach their position and pause, only to find themselves suddenly engulfed in clouds of flame and choking black smoke. The flamethrower attack had the desired effect, forcing the surviving defenders to flee in disorder. To the west, Reserve-Infanterie-Regiment 39 (part of VII. Reservekorps) had been more aggressive than the German regiments operating against the French centre and right: *Stoßtruppen* and supporting infantry battled their way into the Bois d'Haumont and took the position after five hours of hard fighting.

The struggle in the Bois des Caures continued on into the night, with Lieutenant Robin launching several bayonet charges that retook some previously lost redoubts. The 59^e BCP officer recalled how 'after a certain time [the Germans] succeeded in establishing themselves in our front-line trenches and holding on. Counter-attacks took place and grenade fighting continued the whole night. In the end our positions were virtually intact' (quoted in Dugard 1917: 122). By the end of the first day's fighting the Germans had taken 600 casualties, more than expected and testament to the strength of resistance they were encountering. Robin's men also took several prisoners during the night-time counter-attacks, one of whom gave Robin the disconcerting news that all the German infantry action up to that point had been conducted by little more than strong patrols – the main blow was due to fall on 22 February.



The dawn of 22 February saw a furious renewal of the previous day's artillery bombardment, resulting in the loss of more men, the destruction of more defensive works, and the continued pulverization of the Bois des Caures. A *sergent* from the 56^e BCP who had been part of the reinforcements brought up the previous day found his half-section (14 men and a *caporal*) moving up to the front line just in time to experience some of the night-fighting. The following day's artillery bombardment shook him and his men to the core, killing seven of them and wounding two more, a representative loss as this barrage would prove to be deadlier than that of the previous day, cutting down more men and obliterating most of the French front-line trenches.

Generalleutnant Konstantin Schmidt von Knobelsdorf, 5. Armee's chief of staff, had seen the success achieved by the use of aggression at the Bois d'Haumont in the previous day's fighting. The weakness of the French positions was not fully appreciated until the relative success of the German patrols all along the line highlighted it so clearly, but there had not been enough time to reinforce those initial attacks on 21 February. As a consequence, Schmidt von Knobelsdorf was determined that there would be no doubt as to the outcome of the assault on the 22nd, ordering the full weight of XVIII. Armeekorps against the Bois des Caures, with the flanking corps also to press forward with maximum effort, aiding XVIII. Armeekorps' attack in the centre wherever possible.

The artillery barrage ceased around noon, and the assault that followed was swift. The *sergent* of the 56^e BCP recalled what happened the moment the barrage lifted:

It was then that the Germans swarmed from their trenches for the attack. We had hardly manned the firing trench before they came in on our left and right. My men made a bee-line for the communication trench leading to the support trench. I was about to do the same but the Boches got there first. One of them took aim at one of my chasseurs who was a few yards ahead of him in the communication trench. I anticipated him and brought him down flat at fifteen metres. The man behind him at once made for me with the bayonet, but I waited for him calmly and felled him as he came up. He fired almost simultaneously, and the bullet carried away the sights of my rifle but did not touch me! I turned round just in time to lay low my third Boche. (The latter was an officer, to judge by the fact that he was giving orders). Others rushed up and I emptied my magazine into them, and I believe that I hit a fourth in the arm or shoulder, as he dropped his rifle. (Quoted in Dugard 1917: 129–30)

Cut off from his men by the advancing waves of 'Boche', the *sergent* went to ground, hiding for five hours in a tunnel until the opportunity to escape presented itself; after numerous misadventures he made it back to French lines that night.

The attack by XVIII. Armeekorps drove deep into the Bois des Caures, but the going proved to be much harder than the Germans had expected. Driant's skilful positioning of his defensive works had not been entirely undone by the artillery barrages, a problem that was exacerbated by the horribly mangled confusion of splintered branches, trees ripped out of the ground and great



German troops (including a diminutive 15-year-old Austrian volunteer) pose for a photograph while inspecting an overrun French medical dugout in the Bois des Caures, sometime in late February 1916. The bunker was likely sited behind the 'R Line', the third of the three defensive lines that made up the *chasseurs'* position in the Bois des Caures. (Courtesy of Brett Butterworth)

gouts of displaced earth that made manoeuvring difficult and caused havoc with unit cohesion. German troops were often reduced to operating in small ad hoc groups, subjected to rifle fire from individual *chasseurs* or streams of machine-gun fire that seemed to come from any and every direction as they tried to work their way through the cratered landscape. The *chasseurs* also launched counter-attacks in the spirit of French infantry doctrine, though the results were usually costly. The officer of the 59^e BCP recalled one such occasion during the early stages of the German assault on the 22nd:

When the German attack was almost on us a lieutenant sprang forward at the head of his company to lead a counter-charge. He was hit in the hand, but wrapped it up in his handkerchief and cried out, 'Forward!' A second bullet hit him and he fell in a heap. Another officer immediately took his place, but had not gone more than a few yards before a bullet passed through his throat. (Quoted in Dugard 1917: 122–23)

Despite such valiant attempts at resistance, the combination of German numbers, infiltration tactics and special weapons started to tell. The two companies at the northern edge of the Bois des Caures, Séguin's 7^e Compagnie and Robin's 9^e Compagnie, were under impossible pressure, with the use of grenades soon giving way to stones and rifle-butts in the most desperate moments. The two companies, desperately understrength even before the start of the day's fighting, were effectively annihilated; Séguin, his right arm blown off by a shell, was taken prisoner, as was a broken Robin, the remnants of their companies mopped up by flamethrower-wielding *Pioniere* (Horne 1964: 87–88). The flanks of Driant's entire position were also soon in danger as significant numbers of Germans were advancing on the village of Haumont to the west and the Bois de Ville to the east.

Driant's headquarters had come under attack at 1300hrs, the *lieutenant-colonel* himself wielding a rifle alongside his *chasseurs* until the Germans

were driven off, but it was the most temporary of reprieves, another assault following on soon after. The 59^e BCP officer recalled:

About half-past three the situation became really critical. The circle was closing in on us and the Germans had even brought up by the Ville road a gun which raked the position which was our principal centre of resistance. It was then that I was summoned to Lieutenant-Colonel Driant ... He said at once, not choosing his words: 'In a few minutes we shall have to choose between dying or being taken prisoner.' He thought a short time and added: 'Unless we make an attempt to bring away some of these poor fellows.' (Quoted in Dugard 1917: 123–24)

There were around 80 *chasseurs* left at Driant's command post, the rest being scattered throughout the Bois des Caures fighting their own battles; the imminent threat of another German infantry attack coupled with the gunfire coming from the Ville road (from not one but two 7.7cm guns under the command of an enterprising German officer, Hauptmann von Wienskowski) made any attempt at a withdrawal a matter of urgency.

After dividing his small force into three detachments, at a little after 1630hrs Driant ordered them to break through to the south and make for the 2nd Position defences at the village of Beaumont. The column moved out and was taken under fire by machine guns and rifles from elements of three German regiments as soon as it broke cover from the wood; in the ensuing scramble Driant and both his battalion commanders were cut down and killed. The three battered detachments did escape, however, as did a number of other *chasseurs*, many of them wounded, around 500 in total making it back to the temporary safety of Beaumont. The two battalions of *chasseurs* that defended the Bois des Caures for the best part of two days had paid an enormous price for their gallantry, but it was not a wasted gesture. The stubbornness of Driant and his men slowed the German advance and caused 5. Armée's timetable to slip – a bad omen for the Germans on the very first day of the campaign.

By the end of 22 February the village of Haumont was in German hands, and would remain so until the last months of the war. The next day the Bois d'Herbebois, Wavrille and the village of Brabant also fell, followed soon thereafter by Samogneux, Beaumont following on 24 February, and then Louvemont. Similar disasters were being inflicted all along the eastern bank of the Meuse, with Général de division Herr seemingly incapable of stemming the multiple flows of the German advance. Within a matter of days he would be *limogé* (a form of enforced rustication for officers Joffre considered of no value, metaphorically being sent to the quiet town of Limoges where they could do no further harm); his removal came the day after Fort Douaumont fell on 25 February, the crowning shock of the first phase of the German campaign. Even though the forts had been stripped of their guns and men there was still an assumption that Fort Douaumont, the mightiest, most famous and best-sited of all Verdun's fortresses, would prove to be a severe obstacle to any German attack. In the event it succumbed in an almost farcical manner within a matter of hours, the result of German opportunism and French incompetence. In the closing days of February, there seemed little hope left for Verdun.

Mort-Homme

9 April 1916

BACKGROUND TO BATTLE

The initial German successes on the eastern bank of the River Meuse were significant, but incomplete. Castelnau's decision to stand and fight coupled with the appointment of Pétain to the command of the Verdun sector had steadied French nerves. The German attack was ongoing, but lacked the strength to crack the French front in two. Fresh divisions thrown in at the right moment might have carried the day during the crucial hours of 25–26 February, but Falkenhayn refused to release them, betraying an inflexibility of thought that would have far-reaching consequences for 5. Armée.

The German advance slowed in late February due to increasingly stubborn French resistance, aided by shortcomings in the German artillery units that left many French defensive installations essentially intact. The German gunners were exhausted, and gun barrels were wearing out from constant use. In addition, snow gave way to rain, turning the shell-churned earth into a quagmire that made it difficult for German artillery units to relocate as the offensive moved forward. The French artillery units, reorganized by Pétain, now bombarded the German troops as they advanced. Numerous heavy-artillery batteries (equipped with guns such as the de Bange 155mm M1877 long cannon) fired directly into the exposed German flank from the Bois Bourrus on the western bank of the Meuse, causing horrendous casualties.

On 28 February, at a meeting between Falkenhayn, Crown Prince Wilhelm of Prussia and Schmidt von Knobelsdorf, it was agreed to extend the offensive to the western bank, while launching a simultaneous attack on the French positions around Fort Vaux that were enfilading the German advance from the east. The plan for the western bank was limited to the capture of



Côte de l'Oie (Goose Ridge) and Mort-Homme (Dead Man's Hill), thereby depriving the French of Mort-Homme's excellent observational qualities and allowing the German guns to move within range of the French artillery batteries sheltering behind the Bois Bourrus. Aware that at least some of 5. Armée's focus had shifted westward, the French worked to improve the western bank's fortifications; responsibility for its defence fell to Général de division Georges de Bazelaire's VII^e Corps d'Armée, with five divisions at the time of the German attack.

Dawn on 6 March saw the commencement of another German artillery barrage that blanketed the French positions as far back as the fortress line in fire and gas, lifting at 1000hrs as the infantry of VI. Reservekorps began their attack, spearheaded by 12. and 22. Reserve-Divisionen. The German guns successfully cut all French communications to the rear areas, and the French outpost line of blockhouses and belts of wire, already only lightly manned, was pounded into irrelevance. Supported by fire from an armoured train, 22. Reserve-Division crossed the Meuse, storming the villages of Forges and Regnéville before turning on the main French line on the Côte de l'Oie. At the same time 12. Reserve-Division crossed over the Forge stream, both divisions partly concealed by fog and a snowstorm that covered the battlefield.

The French troops, many of them inexperienced and unprepared, began to crumple, the 67^e DI suffering particularly badly. The attempts of the French guns to interdict the advance were hampered by the muddy state of the ground that swallowed incoming artillery shells, their fuzes failing to detonate. Forges and Regnéville were soon in German hands; 22. Reserve-Division secured the eastern half of the Côte de l'Oie by nightfall on the first day. On 7 March the Germans attacked Cumières and the Bois

Pioniere and *Stoßtruppen* undergo training in how to conduct a flamethrower attack, sometime in early 1917. Though this team are using a *Kleif* M1917 flamethrower, the essential mechanics of the weapon were the same as those of German flamethrowers used in 1916, as were the tactics employed by the *Stoßtruppen*. The range for activation of the flamethrower was no more than 20m (the longest effective range for all the early *Kleif* models), ideally from a concealed position, and while the lance could be used in both under- and over-arm positions as the situation required, the high pressure of the jetting flame made it difficult to control. (Courtesy of Brett Butterworth)

des Corbeaux, securing both by the late afternoon. At 0700hrs on 8 March a desperate French counter-attack conducted by Lieutenant-colonel Macker's 92^e RI drove the Germans deep into the wood, retaking much of it, but the wood's importance in any future attack on Mort-Homme meant that the Germans had to seize it back once again. After two days of savage fighting, by the early afternoon of 10 March Macker and most of his officers were dead and the remnants of his regiment, barely 300 men, were ejected from the Bois des Corbeaux.

With the Côte de l'Oie and the Bois des Corbeaux now in their possession, the Germans were finally able to launch an attack on Mort-Homme and Côte 304, the latter an adjacent hill that sat to Mort-Homme's west and which provided security for its flank as well as offering a good position from which to enfilade any German attack that might be made on the main hill. The date for the next phase of the assault was set for 14 March.

Tuesday 14 March proved to be the first fine spring day of 1916. The first major attack on Mort-Homme was presaged by a six-hour hurricane of shellfire that saw roughly 120 artillery shells land on the French positions every minute. A stretcher-bearer from the 92^e RI, Jean Vichy, remembered 11 out of his regiment's 12 machine guns being knocked out by the German bombardment, forcing the defenders to rely on rifle and bayonet to hold their position (Martin 2001: 48). Yet the attack proved to be far more difficult than the Germans had anticipated, with the 25^e DI on the northern forward slopes of Mort-Homme resisting doggedly, aided by fire from the French guns in the shadow of the Bois Bourrus.

Launched on a broad front with six divisions, the German attack captured Côte 286.4 (together with Côte 285.9 one of Mort-Homme's two peaks, collectively known as Côte 295), though at a severe cost – Reserve-Jäger-Bataillon 6, for example, lost ten officers and almost 300 men on 14 March (Holstein 2016: 47). French counter-attacks were launched against the German lodgement on Mort-Homme, but to no avail. Even so, the majority of Mort-Homme remained in French hands, allowing continued artillery observation of the eastern bank of the Meuse and the guns of the Bois Bourrus to continue firing – ostensibly the whole objective of the German operation. It would be necessary to take the entire ridgeline, ideally by first neutralizing Côte 304 and the artillery batteries that operated in its shadow, thus denying Mort-Homme its western protector. For the rest of the month German attacks would press forward against Mort-Homme and the approaches to Côte 304, usually to be checked by French artillery or counter-attacks, making gains here and there such as the capture of the Bois de Malancourt on 20 March, but all at a horrific cost: by the end of March German losses were running close to 82,000 men, while the French had lost 89,000 men in fighting them off (Bracken 2018: 123).

On 31 March the German forces were reorganized into Angriffsgruppe ('Attack Group') West, under the command of General der Artillerie Max von Gallwitz. The situation on the ground was slowly improving for the Germans, giving Gallwitz scope for more ambitious action. The German attacks became more focused, grinding away at the French defences one at



FAR LEFT

A sentry at a listening post in Verdun, 1916. Getting supplies to the French troops at the front was a constant problem, a *chasseur* chaplain recalling how 'The fare was neither varied nor dainty. Bully beef and biscuits. It was not much for these men of skin and bone, who needed plenty of sustaining food ... The unhappy ration party arrived with its precious booty. Sometimes something was missing. "The rum. Where to blazes is the rum?" was the cry of a disappointed crowd. There was no reply. A chorus of invective directed against the coward who had not turned up. The next morning the missing cans were found on the road, and among them lay the bearer, dead, with his face to the ground and his arms crossed' (quoted in Dugard 1917: 186). (Jacques Boyer/Roger Viollet via Getty Images)

a time – Malancourt fell on 31 March, Haucourt on 5 April, Peyrou and Vassincourt on 7 April – until the way to Côte 304 was open. Gallwitz decided that with the prospect of a successful joint attack on Mort-Homme and Côte 304 now within reach, a more general assault all along the front taking in both banks of the Meuse offered the best chance of victory.

On the eve of the attack, Lieutenant-colonel Edouard Moisson's 151^e RI was tasked with the defence of Mort-Homme, supported by the 8^e BCP (both from 42^e DI). The 1^{er} Bataillon, 151^e RI, occupied the western summit and forward slope of Mort-Homme with the 4^e, 3^e and 1^{er} compagnies in the first line from left to right. The 2^e Compagnie was in support, along with the 1^{er} Compagnie de mitrailleuses and a platoon from the 1^{er} Compagnie commanded by Sous-lieutenant Roger Campana. To their left was the 162^e RI, holding the first-line trenches that extended down the north-western slopes of Mort-Homme and into the Hayette Ravine. The II^e Bataillon, 151^e RI was stationed to the right, holding the summit of Côte 295; positioned from left to right the 5^e, 6^e and 8^e compagnies were in the front trenches, with the 7^e Compagnie in support in the 'Boyau des Zouaves' communication trench and at Chattancourt, together with the 2^e Compagnie de mitrailleuses (the machine guns of which were interspersed between the first and support trenches). Capitaine de Surian's 8^e BCP held the trenches on the II^e Bataillon's right, stretching north-east opposite the Bois des Corbeaux. The III^e Bataillon remained in reserve: the 12^e Compagnie was furthest forward in a reserve trench called the Place d'Armes, while the rest of the battalion was back in the 2nd Position – the 11^e Compagnie in Ouvrage ('fortification') Laborderie, the 9^e Compagnie in Ouvrage Mollandin and the 10^e Compagnie on the far right beside Chattancourt – with the machine guns of the 3^e Compagnie de mitrailleuses interspersed throughout (Bracken 2018: 135–36).

LEFT

French soldiers clearing out the communication trench leading to Côte 320, 1916. The ruinous state of the trench is a good illustration of how even well-sited and carefully dug positions could be reduced to a series of barely discernible ditches after months of shelling. The men of the 151^e RI and the 8^e BCP had only taken up their new positions on 6 April and were relatively fresh; they were also battle-hardened, having spent 20 days holding the line near Fort Douaumont in mid-March. By contrast, the regiments of the five German divisions that would conduct the attack had been worn down by the previous month's fighting, a situation exacerbated by the German habit of leaving units in the line and replacing losses with fresh drafts of recruits from depots rather than rotating them out in the French fashion. (adoc-photos/Corbis via Getty Images)

The struggle for Mort-Homme, 9 April 1916

- 1 0800hrs:** The German artillery bombardment begins; the left flank of Mort-Homme is battered but remains intact, whereas the damage to the trenches of the right flank proves much more serious.
- 2 1215hrs:** The Germans launch their infantry assault against Mort-Homme and Côte 304. The attackers are rebuffed twice on the left flank, but succeed in taking Côte 295.
- 3 c.1245hrs:** German attacks on the 2/151^e RI and the 8^e BCP prove more successful, with the French line-infantry battalion finally overwhelmed and pushed off the crest of Mort-Homme in the early afternoon.
- 4 1300hrs:** The French reserves are committed to plug the gap on the right flank; the 12^e Compagnie succeeds in retaking the position of the 5^e Compagnie, but at heavy cost.
- 5 1430hrs:** The 11^e Compagnie is ordered to retake the position of the 8^e Compagnie and re-establish contact with the 8^e BCP to the right. The 11^e Compagnie manages to retake the 8^e Compagnie's position, but suffers 90 per cent casualties in the process.

Battlefield environment

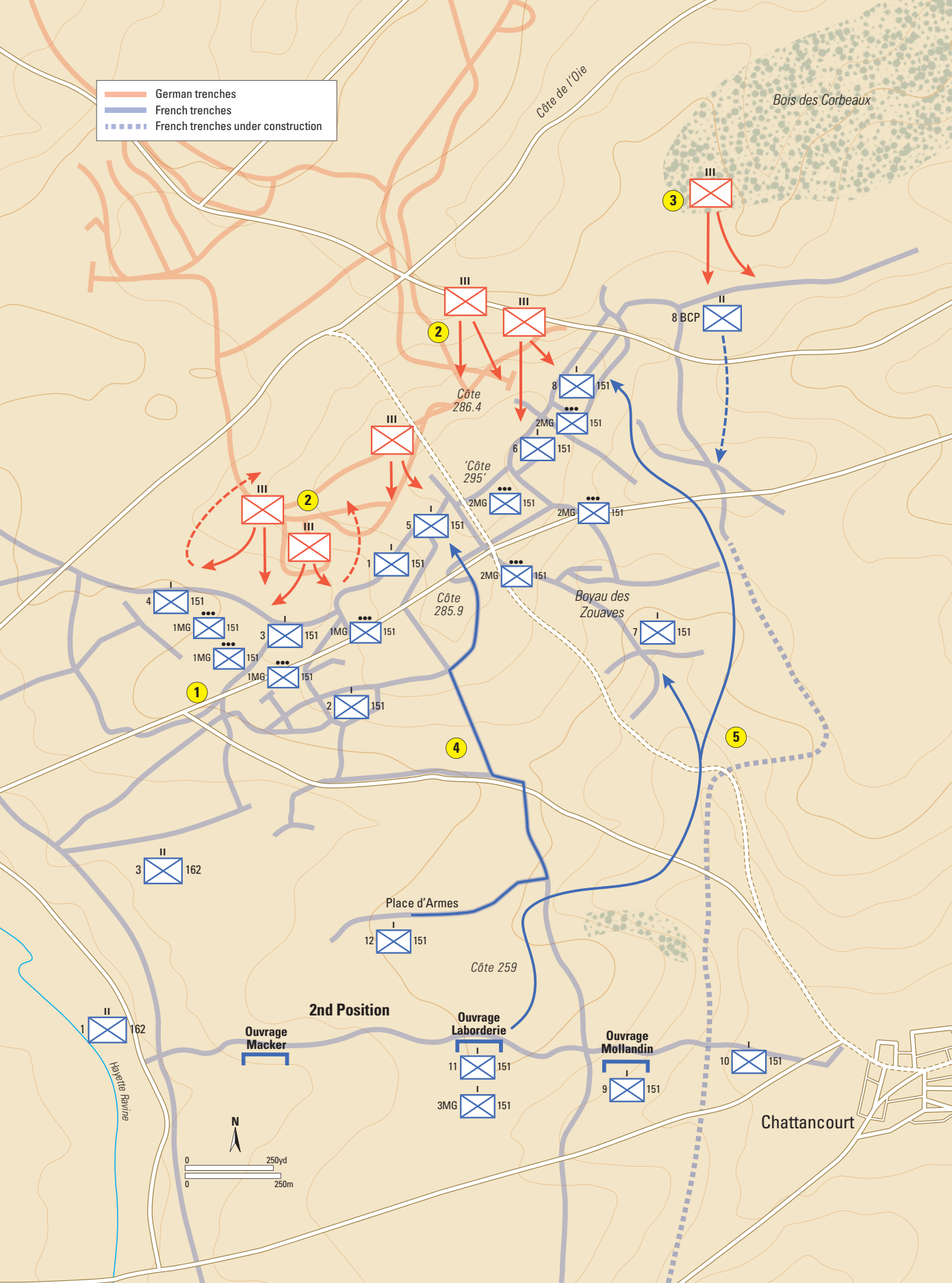
The ground on the western (left) bank of the River Meuse was made up of broad rolling hills and patches of forest, the French position screened by the Côte de l'Oie (Goose Ridge), a long low hill behind which lay the higher ground of Mort-Homme and Côte 304. The land behind the Côte de l'Oie was dominated by two areas of high ground running roughly east to west, the first – Mort-Homme (made up of two peaks collectively known as Côte 295) and Côte 304 – acting as a defensive screen for the second, 2km further back: the Bois Bourrus, site of the western bank's forts. Mort-Homme had excellent views of

the surrounding area, including the eastern (right) bank of the Meuse, and was also a good defensive position in its own right, with Côte 304 serving as an obstacle to any flanking attack from the west. The land around Mort-Homme was much more open than that on the eastern bank, and thus less susceptible to the sort of infiltration tactics that had proven so successful at the Bois des Caures and the Bois d'Haumont. The main roads ran from Béthincourt southwards, the western fork running between Côte 304 and Mort-Homme to Esnes, the eastern fork running around Mort-Homme's flank to Chattancourt.

An image showing the bleak reality of Côte 304 under German artillery barrage during the battle of Verdun, 1916. Both Mort-Homme and Côte 304 were subjected to months of bombardment that left them barren and featureless, one French staff officer present during the April engagements describing Mort-Homme's slopes thus: 'the ground is bare, torn and scarred by the lines of trenches or groups of shellholes. It is all one dead brown. No tree can be seen ...' (quoted in Dugard 1917: 203–04). (ullstein bild / ullstein bild via Getty Images)



German trenches
French trenches
French trenches under construction



INTO COMBAT

German deserters had warned the French of Gallwitz's intentions. At 0800hrs, exactly as expected, the first 10.5cm shells started to burst in the air, heralding a furious bombardment that enveloped the whole sector. A French staff officer who observed the battle from the Bois Bourrus wrote: 'It will be remembered that this action took place on a Sunday, a glorious spring day, with the sun blazing in the heavens. The artillery duel was long and terrible. The Mort-Homme smoked like a volcano with innumerable craters. Before and behind, our barrages and those of the Germans looked like curtains of flame' (quoted in Dugard 1917: 205). The shelling suddenly increased in volume at 1100hrs, delivering an even more devastating effort for the next hour until it intensified yet again at 1200hrs for a final furious 15 minutes that presaged the German infantry attack.

The left part of the line held by the I^{er} Bataillon, 151^e RI, was not in the German gunners' direct line of sight and emerged from the bombardment surprisingly intact, with many of its positions and weapons still serviceable, and broad stretches of barbed wire undamaged. Sous-lieutenant Campana, positioned in support of the I^{er} Bataillon on Mort-Homme's western flank, watched as a signal flare arced into the air, after which the German infantry rose from their holes with bayonets fixed and advanced against his position, only to be caught by French machine-gun fire. Caporal-fourrier Henri Laporte, serving with the 1^{er} Compagnie de mitrailleuses, watched as the German infantry were caught in a crossfire that destroyed the first rank, and then the second that followed on behind it too; the few Germans who made it through the machine-gun fire were finished off by the French infantry with rifles and grenades (Bracken 2018: 139).

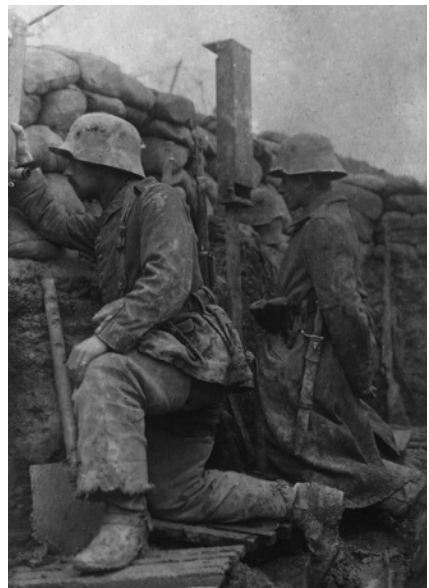
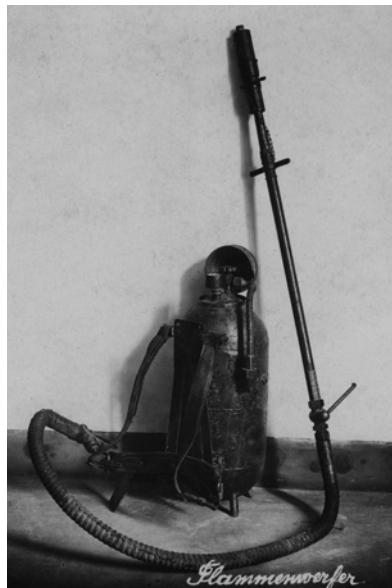
The I^{er} Bataillon's success was not shared by the II^e Bataillon or the *chasseurs*, however. Their trenches were essentially wrecked by shelling from 17cm and 25cm *Minenwerfer*, and their casualties were already

RIGHT

A *Kleif* M1916 flamethrower. Each flamethrower company fielded 12 of the *Grof* (large) M1912 flamethrowers (usually used from fixed entrenchments) and 18 mobile *Kleif* (small) models. Each of the *Kleif* weapons – M1914, M1915 and M1916 models – was operated by a four-man *Angriffstrupp* ('attack squad') consisting of an *Unteroffizier* or *Gefreiter* in command, a *Strahlrohrführer* ('lance operator'), a *Kleifträger* ('fuel-tank carrier'), and a *Hilfsmann* ('assistant') who could also serve as a replacement and a grenadier (Wictor 2007: 42). (adoc-photos/Corbis via Getty Images)

FAR RIGHT

A pair of German infantrymen from an unidentified regiment wear the newly issued M1916 *Stahlhelm* at an observation post by Côte 304, 1916. The decision to advance only on the eastern bank of the Meuse during the initial stages of the battle would prove to be one of Falkenhayn's more telling mistakes, especially considering the effort it would take to remedy that oversight in the following months. (adoc-photos/Corbis via Getty Images)





French soldiers of the 87^e RI, 6^e DI, at Côte 304 on the western bank of the Meuse, north-west of Verdun, 1916. For the defenders, retention of the high ground on the western bank was vital to ensure that the area's French artillery positions could continue to operate. The Germans believed that the key to Mort-Homme lay in taking Côte 304, and the French position there was subject to repeated assaults throughout March and April 1916, eventually falling in May after a terrific German artillery bombardment and days of intense fighting. After the battle, Côte 304 was found to be 7m shorter as a result of the damage inflicted by the German artillery fire. (Gsl-commonswiki/Wikimedia/Public Domain)

severe before the German infantry attack began. Observing the German attack on the French right flank of Mort-Homme, one French staff officer noticed that 'The infantry movement developed about midday, when we saw scouting parties emerge from the gaps between Corbeaux and Cumières Woods ... and the eastern slope of Mort-Homme ... These were the first wave and behind them came strong columns' (quoted in Dugard 1917: 206). Those waves crashed into the 5^e, 6^e and 8^e compagnies; it seemed that the first-line trench must fall, at which point Sous-lieutenant Campana saw one of the Hotchkiss machine guns of the 1^{er} Compagnie de mitrailleuses fire into the flanks of the German infantry attacking the II^e Bataillon's trenches. Many of the attackers were swiftly cut down, causing the remainder to scramble for cover, most of them falling to the Hotchkiss or the rifles of Campana's platoon (Bracken 2018: 139–40). Further to the right, the 8^e BCP positions were entirely obscured by thick clouds of oily black smoke, testament to the fact that the Germans assaulting that section were using flamethrowers to burn their way through the French line.





Flamethrower assault at Mort-Homme



German view: As part of the general German attack across the whole Verdun sector, assault detachments drawn from Reserve-Infanterie-Regiment 23 are in the vanguard of the attack, supported by *Pioniere* and specialist flamethrower teams from III. Garde-Pionier-Bataillon. They have worked their way towards the French trench line on the eastern flank of Mort-Homme; the heights are held by the two battalions of the 151^e RI, while the eastern slope of the hill dips into a shallow ravine where a battered trench is manned by troops of the 8^e BCP. One group of German assault troops has infiltrated to well within 20m of the *chasseurs'* position by *indianermässigen Vorpirschen* ('Indian-style forward stalking'),

getting the troops close enough to launch their attack. The assault is initiated by the *Pioniere* team carrying a *Kleif* M1915 flamethrower, the *Strahlrohrführer* ('lance operator') launching a thick jet of fire out towards the Frenchmen, engulfing a section of the trench in broad splashes of flame and billowing black smoke. At the same time scattered groups of supporting assault troops open fire with their rifles and hurl showers of *Stielhandgranaten* to suppress any defenders who have not been consumed by the initial inferno. Once the resistance falters, the assault troops, supported by the oncoming waves of infantry, will attack in a *Schwarmlinie* ('swarm line') and seize the position.



French view: The *chasseurs* of the 8^e BCP have endured a savage morning. Along with the 151^e RI on the heights to the left they have been subjected to a shattering artillery bombardment of an intensity unusual even for Verdun. The cessation of the bombardment at 1215hrs can only mean an attack is imminent, but the form of that attack is nightmarish. German assault troops have made it to within striking distance of the trench and now all is fiery confusion as men are engulfed in boiling clouds of flame or struck down by bullets and grenade bursts. Several men, wounded or simply terrified, are fleeing the flames and explosions, but a small force of *chasseurs*, having avoided the worst of their trench's

immolation, are starting to fight back as best they can. One man is bringing his CSRG Chauchat M1915 into action; a new weapon only just introduced to the French Army, the automatic rifle doesn't have the sustained-fire capability of the Hotchkiss M1914 machine gun, but its thudding 240rd/min rate of fire is a significant improvement over Lebel and Berthier bolt-action rifles. Several of the *mitrailleur automatique's* compatriots are edging over the lip of their ragged trench to fire their rifles or throw hand grenades under their own initiative. Their officer, badly wounded by the blast of a German grenade, leans against the trench wall to steady himself as he draws his revolver, refusing to give in.

A second major German attack struck the I^{er} Bataillon; the Hotchkiss machine gun that had fended off the earlier assault was knocked out by a 21cm shell. Campana's men fired at the attackers, but the volume of their rifle fire was no substitute for that of a machine gun, and the Germans entered the first-line trench whereupon a vicious hand-to-hand fight ensued. Campana shot off a red flare requesting artillery support and was overjoyed when it arrived in the form of a barrage from '75's. Caught between accurate rifle fire and salvo after salvo of 75mm shells, the second German attack disintegrated (Horne 1964: 167).

Meanwhile, to the right, the II^e Bataillon and the *chasseurs* were in desperate straits. The three companies defending Mort-Homme had been overwhelmed by the attackers and the remnants of the 8^e BCP had been driven back from their original positions as well, forcing Moisson to commit his reserves to plug the gaps in his lines. The III^e Bataillon's 12^e Compagnie, supported by the 7^e Compagnie, mounted a counter-attack, advancing in two waves; despite taking many casualties from shellfire, the 12^e Compagnie made it to the ragged line of shell holes that had been the 5^e Compagnie's position and ejected the occupying Germans. The French staff officer recalled how:

The German barrage behind our front line was so intense that it would be suicide to attempt to get through it. How will our reinforcements go up? Our apprehension began to evaporate when ... a disorderly crowd was seen making for the shelter of Cumières Wood. It is always a cheering sight to see the enemy in flight ... even as we watched our shells began to burst among them and they broke up, stopped and dispersed. (Quoted in Dugard 1917: 207–08)

His joy at seeing the Germans thrown back was genuine, if misguided. The 12^e Compagnie had secured a remnant of the line, but the 7^e Compagnie, tasked with covering the position of the 8^e BCP and establishing contact with the 12^e Compagnie's position on the upper slopes of Mort-Homme, had been driven back.

At 1430hrs a note from Commandant Coltat of the III^e Bataillon informed Sous-lieutenant Raymond Jubert that Mort-Homme had been overrun; his company was to launch a counter-attack, advancing to the right of the 12^e Compagnie and retaking the 8^e Compagnie's lost position, also re-establishing contact with the 8^e BCP to the right. The 100 men of Jubert's 11^e Compagnie assembled in silence, dropping their packs and stocking up on ammunition and a day's rations. Jubert describes the progress of his men as they rose up, abandoned the communication trench and moved across the open ground because it was quicker to do so:

We arrived at the crest [of Côte 259]. Here we descended toward the [Chattancourt] ravine where a crucible of deadly explosions and fumes were concentrating in an infernal thunder ... German shells were raining around us; the men kept quiet. They kept marching, grim-faced and in proper order ... towards the barrier of fire and steel that arose before us. I recognised that, scary though they seemed, such gunnery often did little damage. As I looked back to make sure that my men were following me, a shell-burst blew a soldier several metres into the air and, dead, his

OPPOSITE

French infantry fight off a German attack in a suspiciously dramatic photograph, c.1916. The fighting for Côte 304 and Mort-Homme proved to be some of the most intense and distressing of the entire Verdun campaign. The environmental conditions alternated between days of pouring rain forcing men to stand knee-deep in mud and slurry, giving way to stretches of intense heat that drove men mad with thirst, water being very difficult to transport to the forward lines in any amount or with any regularity. Regular artillery bombardments were punctuated by attack and counter-attack, the dead usually lying where they fell. French infantry were rotated into the line approximately every 15 days as part of the *Noria* ('waterwheel') system, but even with such regular replacement the terrible conditions and intensity of the combat meant that many battalions were effectively destroyed as viable fighting units by the time they were pulled off the line, with losses often far in excess of 50 per cent among the men, and usually more among the officers. (©Hulton-Deutsch Collection/CORBIS/Corbis via Getty Images)

body landed on the rim of a new crater; a half-section had been thrown to the ground. Despite a short moment of anxiousness and fear the men soon got back up, quickly and instinctively forming line once again. There was only one killed; the danger had passed. Death had come between us, but our ranks were unbroken. (Jubert 1918: 117–18)

The only enemy activity they had so far encountered was shellfire, but Jubert, seeing Sous-lieutenant Mollet beckoning him over, got a better sense of where the Germans were, and sent one of his sections armed with grenades to advance through the Boyau des Zouaves (a communication trench) while the rest of his company moved towards the crest line to the right. The sections, led by their officers marching ahead of them, went forward in good spirits, with shouts of encouragement and bravado keeping the mood high, in part because the Germans were still nowhere to be seen. Jubert pressed on towards the crest, now little more than 100m away, when the clatter of a machine gun suddenly started up around 500m away from the direction of 8^e Compagnie's old command post to the left, prompting one of his men to burst into song in a curious defiance of the threat of death, something that spread throughout the rest of the company. The German machine gun's fire was soon joined by that of several others, the raking streams of bullets cutting down three of Jubert's section leaders almost at once:

I heard screams but charged forward. 'Stay in line!' I cried, whilst behind me men shouted 'Forward! We'll be victorious!' The men followed me in good order. Bullets crack past me by the hundred, driving twenty centimetres into the ground and throwing up halos of dirt around me, whipping past the others and grazing by my feet – I jump to avoid them; behind me a man sings the song of the wounded. Bowled along by our élan we reached the crest ... thirty steps [to the trench]; fifteen more; only five. I turn around – where's the company? I jump into the trench; it was empty. I was expecting to be plucked, but the enemy had fled' (Jubert 1918: 121–22)

Moments later others of the company arrived and Jubert began to count the survivors, ten in all. As they looked back the way they had come, they saw that the ground was covered with the dead and wounded, the latter still under machine-gun fire as they dragged themselves towards the newly won position. A quick examination of the trench proved it to be a site of the utmost importance, but one that was filled with nothing but dead men – *zouaves*, *chasseurs* and Germans. Jubert did his best to cheer his remaining men, even though he felt scant reason for it himself, and then scribbled a quick note to his *colonel* informing him of the trench's capture, as well as its meagre number of new defenders, requesting two companies of reinforcements as soon as possible.

Jubert's new position was under sporadic artillery fire, the bombardment redoubling in violence at 2000hrs before fading away with the dying of the light. Having had no response from the messenger he had sent earlier, Jubert decided to report back to the command post himself, where he was greeted with great joy and congratulations for the performance of his



company in retaking 600m of ground and 8^e Compagnie's trench system, but was informed that there were no reinforcements for him. He made his way back through the darkness across ground littered with the dead of his company, and re-joined his small band of survivors. On his own initiative he conducted a reconnaissance to the right, finally making contact with the 8^e BCP and confirming that there was a 600m gap between the remnants of his 11^e Compagnie and the *chasseurs*. For his part, Capitaine de Surian of the 8^e BCP drew up a report on the evening of 9 April, covering the day's terrible events and his men's current state of mind: 'They are doing all they can to hold their ground. The men know the seriousness of the situation, but their *morale* remains good. They are resolved to die rather than give way ... You may rest assured that every man has done his whole duty' (quoted in Dugard 1917: 211).

The undoubted heroism of the men of the 151^e RI and the 8^e BCP could not make up for the fact that, while the Germans had not managed to take Mort-Homme, they had increased their presence on the position and had also secured a lodgement on the slopes of Côte 304. The following weeks would see attempt after attempt by the French to throw the Germans off the ground they had taken, sometimes successfully, but only in limited areas, and only temporarily. Now that Gallwitz had his hooks well and truly into Mort-Homme and Côte 304, there would be no going back until the entire position was taken. By 29 May, the last major obstacle (the Caurettes Ravine) had fallen, signalling the end for the remaining sections of Mort-Homme, which were all in German hands by the end of the month.

Fort Vaux

2–7 June 1916

A portrait (c.1920) of Commandant Sylvain Eugène Raynal, commander of Fort Vaux during the German assault of June 1916. A career Army officer since 1885, Raynal was wounded at the Marne in September 1914, Arras in December 1914 and in Champagne in October 1915. The extent of his injuries precluded a return to front-line duties, but Raynal volunteered for fortress command in the Verdun sector. He arrived at Fort Vaux on 24 May, just one week before the German attack. (Garitan/Wikimedia / Public Domain)



BACKGROUND TO BATTLE

With the precipitous fall of Fort Douaumont so early in the battle the Crown Prince's divisions on the German left (eastern) flank were confronted with the next hurdle to their advance – the forts that were built to provide Fort Douaumont with supporting fire, the closest of which was Fort Vaux. The first German attacks on Fort Vaux came hard on the heels of Fort Douaumont's collapse, with the initial order demanding its capture issued on 26 February 1916 and several attempts made to carry it out over the next few days, all of which were rebuffed as the French Army started to recover from the shock of that terrible first week. Further German attempts in the first half of March suffered dreadfully at the hands of a multitude of well-sited interlocking field fortifications that screened all the approaches to the fort. The Germans, positioned in a tight semi-circle around Fort Vaux, were in some places only 140m from the walls, but the terrain, the network of field fortifications, and the quick and telling response of French artillery to any attack resulted in weeks of stalemate and a dispirited German Army.

The end of May saw something of an improvement in German fortunes, with the capture of Mort-Homme and Côte 304 on the western bank of the Meuse sparking a new impetus across the rest of the front to align for a final push on Verdun itself. In order to secure suitable jumping-off points on the eastern bank of the Meuse to match those just won on the western bank, a new offensive – *May Cup* – was organized. The job of finally cracking Fort Vaux fell to General der Infanterie Berthold Deimling's XV. Armeekorps, the attack to be spearheaded by 50. Infanterie-Division. The operation was to be launched on 1 June and called for the systematic



reduction and capture of all of Fort Vaux's outer defences, estimated to take four days, with a strike on the fort proper to be launched on 5 June. As the assault got under way the Germans were surprised and then delighted to discover that things were progressing much more quickly than anticipated, and before 1 June was out all the initial objectives had been taken, leaving Fort Vaux isolated and tightly hemmed in by German battalions on three sides. The unexpected success of the operation dropped an opportunity in Deimling's lap that he was keen to exploit; he brought forward the main assault on Fort Vaux to 0200hrs on 2 June, causing officers and men to scramble about to make it to their new jumping-off points in time. The attack was to be relatively straightforward: I. Bataillon, Infanterie-Regiment 53 was to envelop the eastern side of the fort, with I. Bataillon, Infanterie-Regiment 158 tackling the northern and western sides. Each infantry battalion was to have the assistance of an assault detachment of *Pioniere*, though the confusion caused by the new orders resulted in some units starting later than others.

The object that now seemed so close to Deimling's grasp had already endured months of bombardment and attack, but had so far proved surprisingly resilient. Though Fort Vaux was the smallest of the forts around

The main gallery of Fort Vaux, pictured here in March 1917 four months after its recapture. The main gallery was where the barracks, aid post and radio room were located, and it allowed access to the left and right casemates, as well as to the tunnels that led to the central gun emplacement and the western and eastern counterscarps. It was also the most spacious area of the fort's underground complex. (Photo12/Universal Images Group via Getty Images)

The south-west entrance to Fort Vaux, 1916. During the German attacks in early June, constant artillery fire and the presence of German machine guns on the roof made access to the fort extremely difficult. There were two ways into the fort, both through the southern wall: the Entrée de Paix (Peace Gate) which was accessed by a simple road that led to a drawbridge over the ditch, and the Entrée de Guerre (War Gate), accessed by a tunnel that ran under the ditch. Plans had been mooted to deepen and considerably lengthen the tunnel that led to the Entrée de Guerre, correctly anticipating the problems that reinforcements would encounter having to advance in the open until almost at the fort's walls, but no work was done prior to the battle. (Roger Viollet via Getty Images)

Verdun, it was well-built and only recently refurbished. Nevertheless, it suffered from the same problem as the rest of the forts in the Verdun Fortified Region – it had no guns. Fort Vaux's main rotating turret for a pair of 75mm guns had been knocked out through misadventure: the chamber had been laid with explosives after the fall of Fort Douaumont in case the order came to deny the position to the Germans by destroying it, but though the order never came the explosives were not removed, and a direct hit by a 42cm shell detonated them, completely destroying the turret. The other four 75mm guns that were supposed to occupy the flanking casemates had been removed some months earlier in the misguided redistribution of artillery that saw so many of Verdun's forts stripped of their main defences.

Despite the fact that Fort Vaux had survived the worst that the very heaviest German guns could throw at it week after week, it did not come through such trials unscathed. Major Sylvain Eugène Raynal, appointed to the command of the fort a week before the German offensive, found himself feverishly busy organizing repair parties to patch up the worst of the considerable damage that the German guns had done to Fort Vaux. There were numerous breaches that had to be repaired or at least mitigated if the fort was to have a reasonable chance of surviving a major attack. Fort Vaux's planned peacetime complement was 157 men, rising to 270 in the event of war. On 1 June 1916 the fort's garrison consisted of the 6^e Compagnie





and the 3^e Compagnie de mitrailleuses from the 142^e RI; detachments of artillerymen to operate the fort's non-existent guns were drawn from the 34^e Batterie, 5^e RAP (*régiment d'artillerie à pied*, 'foot-artillery regiment') and the 6^e RA (*régiment d'artillerie*, 'artillery regiment'); two companies of sappers (17/51T Compagnie and 2^e Compagnie) were also present, seconded from the 2^e and 9^e RG (*régiments du génie*, 'engineer regiments'), and the *poste de secours* ('aid station') from the 101^e RI.

By 2 June the fort's complement had swelled with units fleeing the onslaught outside its walls; on the afternoon of 1 June some 50 men, remnants of the 101^e RI who were no longer in any fit state to fight, arrived at the fort looking for refuge, followed by the 3^e Compagnie de mitrailleurs from the 53^e RI, while elements from three of the 142^e RI's companies – over 100 men from the 7^e Compagnie, as well as others from the 5^e and 8^e compagnies – stumbled in during the night of 1/2 June. With all these additions to the fort's original garrison as well as any number of stragglers and the wounded who had been collecting there, Raynal found himself in charge of over 600 men, four carrier pigeons and one Cocker Spaniel called Quiqui, a sapper's pet.

French infantry near the destroyed outer works of Fort Vaux, 1916. Though the fort proved remarkably resilient to months of German artillery bombardment, it did suffer significant amounts of damage that, had Raynal not instigated an emergency programme of repairs, would have made it indefensible in the face of a serious assault. Prior to Raynal's arrival, the generally poor state of maintenance in the fort (for example the water cistern), as well as the failure promptly to repair areas damaged by shelling, severely weakened the fort's ability to endure the German attack. (Christophel Fine Art/Universal Images Group via Getty Images)

The German assault on Fort Vaux, 2–7 June 1916

1 0500hrs, 2 June: An assault by I. Bataillon, Infanterie-Regiment 53 and I. Bataillon, Infanterie-Regiment 158, supported by detachments from Pionier-Bataillon 20, attacks Fort Vaux on three sides, the Germans forcing their way into both counterscarp bunkers.

2 c.2000hrs, 3 June: A German attack in the eastern tunnel briefly overcomes the first French barricade before the attackers are forced back.

3 1230hrs, 4 June: The Germans launch simultaneous

flamethrower attacks in both the western and eastern tunnels. Despite the apparently inconclusive nature of the assaults, Raynal decides to pull back from the tunnels.

4 0700hrs, 5 June: Tired by their lack of success in the tunnels, the Germans launch attacks on Fort Vaux's exterior targeting the western and eastern casemates, damaging the western casemate severely and causing the French to retreat further into the fort.

5 0630hrs, 7 June: Raynal surrenders Fort Vaux.

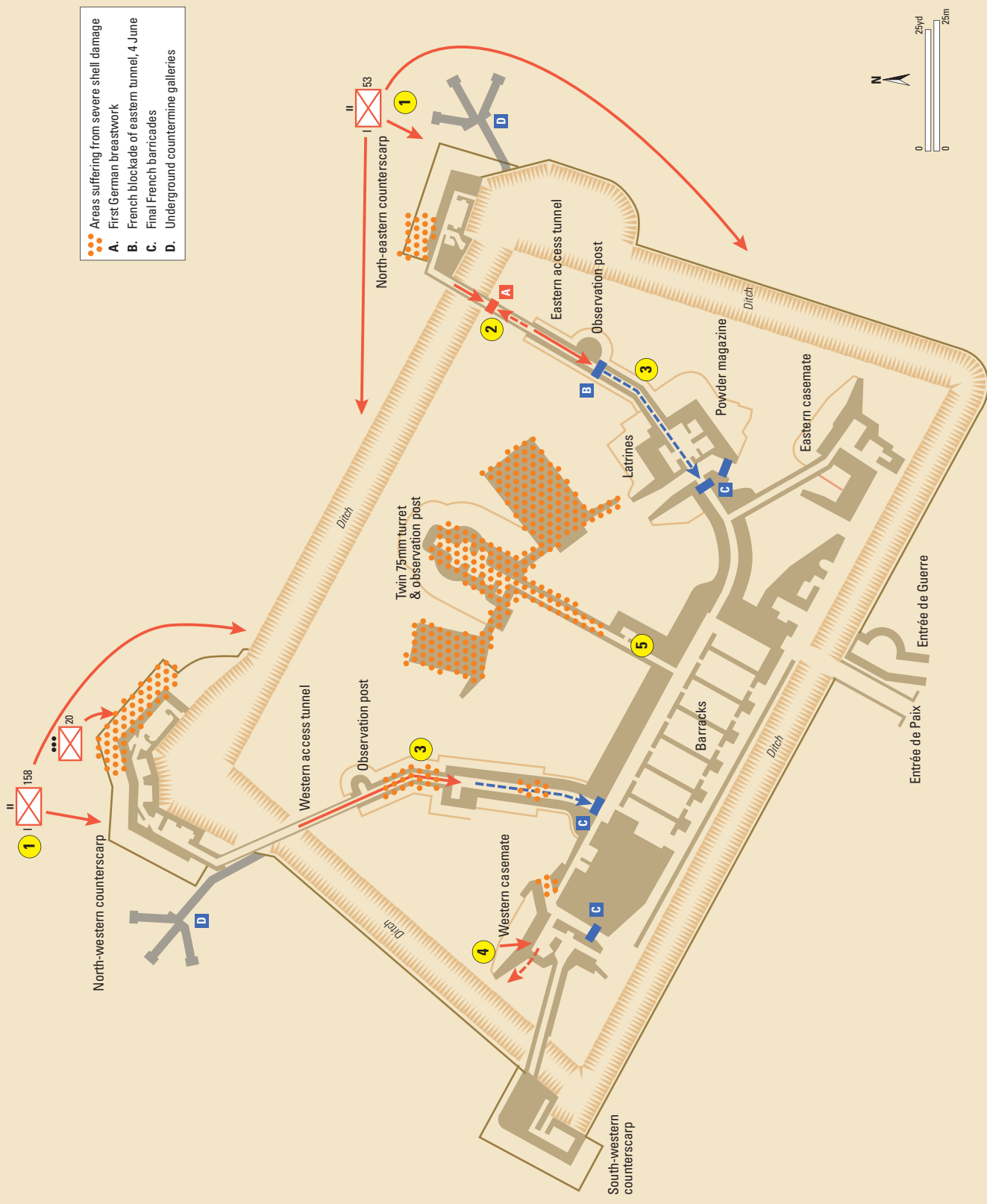
Battlefield environment

Fort Vaux was the smallest of the forts surrounding Verdun, one-quarter the size of Fort Douaumont, and its position in the line left it exposed to enemy attack from three sides at once, the only access being through a gate and associated underground entrance in its rear (south-west) wall; a recommendation to build a more substantial underground access tunnel had not been acted upon, leaving the fort vulnerable to being cut off. Fort Vaux was constructed during 1881–84 and had undergone modernizing improvements three times, the last being in 1910–12, and as a result was actually much better designed and protected than the Belgian and Russian forts that had fallen so quickly in the first days of World War I. Fort Vaux was surrounded by a deep ditch; it

had a centrally positioned twin 75mm gun turret, two flanking casemates for two further 75mm guns each, and a pair of counterscarps (a double counterscarp on the western side and a single counterscarp on the eastern side, designed to fire on any enemy who made it into the ditch) that were connected to the main galleries of the fort by narrow tunnels. The fort had lost its guns through reallocation and misadventure, and was forced to rely upon its own stock of machine guns and the surrounding infantry positions for protection. The structure of the fort would prove remarkably resilient to the battering of even the heaviest German guns, but the shelling did do enough damage to allow German infantry to exploit breaches in the fort's counterscarps.

One of the interior passageways beneath Fort Vaux under modern illumination, most likely a section of the eastern tunnel by the latrines and powder magazine looking towards the curved galley that leads to the main barracks. Towards the back of the image, a jury-rigged internal defensive wall with rifle and grenade apertures can be seen; though temporary obstructions and ad hoc strongpoints were built up in the underground tunnels as a part of the original French defence, those shown here were constructed by their German successors. The faded red line on the wall was painted in sections of tunnel and galleries that were considered bombproof. (Ulrich Baumgarten via Getty Images)





INTO COMBAT

A sense of what was to come seemed to be in the air, one eyewitness noting how ‘The officers ... were constantly walking through our midst; they were as calm and collected as usual, but we felt that the hour was at hand, for they looked into every detail’ (quoted in Bordeaux 1917: 154–55). Then the shelling began. The artillery bombardment was as intense as anything experienced on other parts of the front, with Raynal estimating that at its worst the fort was being hit by between 1,500 to 2,000 shells an hour. An unnamed *chasseur* chaplain described the experience of being inside Fort Vaux during an artillery bombardment courtesy of the German siege guns in March 1916:

It was like dwelling under a sledge-hammer or having someone’s fist planted in the pit of one’s stomach. Imagine solid blocks of eight hundred or nine hundred kilogrammes coming from a distance of twelve to fifteen kilometres, rising to a height of four or five thousand metres and breaking just above one’s head, discharging their devastating contents of sixty to eighty kilogrammes of high explosive. We were stunned every time, and after a few hours of it our nerves were almost shattered. (Quoted in Dugard 1917: 182–83)

The barrage ceased at the approach of dawn on 2 June, heralding the German assault on the line of defensive trenches that surrounded the fort, manned by men from the 142^e RI and the 101^e RI. With barely 200m of ground to cover the German attack was swift, a vitally important fact in that it allowed some of the first line to surprise the defenders, cut through the French trenches and scramble up the fort’s glacis, some of the men from I. Bataillon, Infanterie-Regiment 53 making it into the ditch and then up on to the main roof of the fort itself. Fort Vaux’s defenders, hearing the artillery bombardment cease, followed the usual pattern by exiting the fort and attempting to make their way on to the roof and the glacis to aid the defence of the forward trenches, but this time they were met by a storm of German hand grenades and rifle fire, forcing them to abandon the exterior and retreat back inside. The two northern counterscarps quickly took the ditch under fire, isolating the small band of Germans who had made it on to the roof of the fort from their comrades on the lip of the glacis.

It would be necessary to knock out both counterscarp bunkers before the ditch could be crossed, a task undertaken by Leutnant Rackow of 3. Kompanie, Infanterie-Regiment 158. Shell damage had left breaches in the rear of both counterscarps, and although these faced towards the enemy the defenders had made much use of them as sally points over the preceding weeks. The north-eastern counterscarp’s breach was defended by a machine gun that Rackow’s men couldn’t approach, so some of them worked their way around the flank and gained the roof of the bunker, trying to blow out the gun embrasures that faced the ditch with bundles of grenades, but to no avail. Unfortunately for the Germans, though the offensive was to be supported by teams from Pionier-Bataillon 20, the acceleration of the attack timetable meant that much of the unit had been parcelled out for now-redundant duties the night before, and so did not have the numbers required

for the operation. Whatever *Pioniere* and equipment that was available had been sent forward, arriving at Infanterie-Regiment 158's position at 0500hrs where they formed an assault group led by Leutnant der Reserve Ruberg of 1. Reserve-Kompagnie, but they were late in moving out and Rackow had to make do with hand grenades and rifles in his attempt on the north-eastern counterscarp.

Despite his lack of specialist *Pioniere* and their weapons, Rackow still had some luck left; the French machine gun defending the bunker breach suddenly jammed, and as the crew scrambled to resolve the problem a perfectly timed German hand grenade exploded among them, knocking out the men and the machine gun. A platoon of the 7^e Compagnie, 142^e RI, led by the 7^e Compagnie commander Capitaine Georges Tabourot, were occupying the north-eastern counterscarp and took up the fight with grenades in a battle that degenerated into hand-to-hand combat. The Germans were pushed back at first, one of the defenders recalling how 'Our bombs made gaps in their ranks, but reinforcements were continually coming up. Their dead and wounded formed shifting heaps, and, to add to the horror of it, these were cut and torn by splinters from our projectiles' (quoted in Bordeaux 1917: 158–59). Tabourot took a grenade blast in the back that mortally wounded him, while the furious exchange of explosives had set detritus within the bunker ablaze, forcing the 33 Frenchmen remaining inside to surrender.

The engagement against the north-western counterscarp bunker had developed at much the same time as Rackow's attack on the north-eastern counterscarp, but was making less progress as the defenders had sealed up the breach, allowing the attackers no easy access. By this time Leutnant Ruberg's force including the detachment from Pionier-Bataillon 20 had arrived, and swiftly set to the job of breaking into the north-western counterscarp. Having manoeuvred on to the roof of the bunker, the *Pioniere* lowered bundles of grenades in front of the embrasures, detonating them and wrecking some of the French guns. They quickly followed this by positioning *Brandröhre* (long poles with angled flame projectors on the end – a rudimentary precursor to the *Flammenwerfer*) in front of the gun ports and ignited them, each one shooting a 2m jet of flame into the interior of the bunker in an attempt to kill or drive out its occupants. The grenades and flames kept the French away from their guns long enough for Rackow and some more of his men to make it across the ditch and on to the roof of the fort, but soon enough the mechanical chatter of machine-gun fire started up once again, raking the northern and western channels of the ditch.

The eventual capture of the north-western counterscarp was something of an accident. A group of Germans were in the process of digging in outside the ditch when they uncovered a poorly patched hole that led into the bunker. After a few hand grenades had cleared the way the soldiers made their way in to find that the position had been abandoned in great haste, giving the Germans control of both counterscarps and the ditch they defended (Holstein 2011: 62). Now that they were inside Fort Vaux, the Germans began to push out exploratory patrols down the western and eastern tunnels that connected the counterscarps to the fort's main gallery.



A Bavarian *Unteroffizier* wearing an early-model *Gummimaske* (rubberized gas mask) and sporting what appears to be an old Belgian pinfire revolver poses for a studio portrait in January 1917. The choking clouds of smoke produced by flamethrower attacks coupled with the claustrophobic nature of the narrow tunnels beneath Fort Vaux made gas masks and close-combat weapons such as pistols essential for both attackers and defenders. (Courtesy of Brett Butterworth)

Raynal, well aware of the possibility that the counterscarps might fall, had ensured that both tunnels had been blocked at choke-points with barricades of sandbags, rubble from bomb-damaged sections of the fort and anything else that came to hand, including piles of soldiers' packs. At their narrowest the passages were only 1.5m high and 0.9m wide, making them easy to block but difficult spaces in which to fight for both attackers and defenders. At 1500hrs Raynal signalled that 'The enemy has gained possession of the north-eastern and north-western transverse galleries. I am pursuing the struggle in the inner passages. A large number of wounded and fugitives. Officers and men are all doing their duty. We shall fight to the bitter end' (quoted in Bordeaux 1917: 160).

The *Pioniere* pushed along the western tunnel until they reached the main access shaft when the French finally made their presence felt with a grenade attack, forcing the Germans back to the observation post where they built a makeshift barricade to defend their gains thus far. In the eastern tunnel, progress had been held up by a heavy jammed door at the top of some stairs. Leutnant Ruberg was in the process of setting a grenade bundle to blow through the obstruction when he heard noises coming from the other side; he quickly set off the grenades, wounding himself and bowling his men back down the stairs as a result of the confined blast, but the door was gone. The Germans pushed through until they ran into one of Raynal's ad hoc strongpoints guarded with a machine gun, the fire of which forced them all the way back the way they had come until they were once more at the bottom of the stairs, where

A German rifleman beside the corpse of a French soldier in a trench at Fort Vaux, c.1916. The losses suffered by the German regiments engaged in the attacks on the defensive network around Fort Vaux coupled with the miserable environmental conditions had a notable impact on morale, but the units committed to the attack on 1 June were fresh and well-trained. (Hulton Archive/Getty Images)



they built a barricade of their own much like their compatriots had done in the western tunnel.

At 0200hrs on 3 June a message from Raynal was sent by lamp: 'Situation unchanged. The enemy is pursuing his labours on top and round the earthworks. The fort is to be pounded by small ordnance. The enemy occupies our old first-line trenches in force and is strengthening them' (quoted in Bordeaux 1917: 161). While the Germans continued to dig and reinforce their positions outside Fort Vaux's walls as well as on its roof, the battle for the tunnels was developing, but with little success for the Germans. The French barricades were all defended by machine guns that would open up at the slightest provocation, and considering that their fire was channelled down straight lengths of narrow tunnels that provided an attacker with very little cover, making any attempt to advance on them was extraordinarily hazardous. Nevertheless, the Germans persevered and on the evening of 3 June they managed to break through the first of three French barricades in the eastern tunnel, but the defenders counter-attacked, clawing back the lost ground and rebuilding the barricade into the bargain.

Conditions were terrible for both sides, but especially so for the French defenders who had no chance of relief, and for whom other factors were starting to tell. The filth and stench of a fort with more than double the maximum number of occupants it was supposed to be able to sustain was bad enough, compounded as it was by the sounds and smells of intense combat, but it suddenly became clear that the water supply had run out. Owing to a miscalculation of the previous garrison, the 5,000 litres of water Raynal thought he had in the cisterns was in fact all gone by the third day of the siege. The problem with the fort's water supply was not new, the *chasseur* chaplain who was stationed in Fort Vaux throughout the German attacks of March 1916 noting how the artillery bombardments often left the defenders 'choked by dust ... which increased our terrible thirst and added greatly to our tortures. The great cisterns had, of course, been destroyed. On the first day each man had received a quart of water, but that was the beginning and the end. Afterwards we had to fetch it at the peril of our lives from a spring some distance away' (quoted in Dugard 1917: 185–86). There would be no relief from the spring this time.

Unlike the French, the Germans could call on fresh troops; the exhausted units which had carried the battle this far were withdrawn, being replaced during the night of 3/4 June by men from Infanterie-Regiment 126 and Füsiliers-Regiment 39, with more machine-gun positions established on Fort Vaux's superstructure, effectively cutting off all access through the southern entrances and leaving the fort isolated from help. For the groups of *Stoßtruppen*, *Pioniere* and infantry attempting to battle their way through the brace of tunnels inside the fort, the best part of two days' worth of fighting had delivered little progress. Flamethrowers had been called for early on, but it had taken several days for them to make it to the fort (only six out of the ten requested had arrived by the morning of 4 June, the other four having been destroyed by shellfire en route).

Flamethrower assaults were carried out in both tunnels later that day, each at around 1230hrs. In the western tunnel a detachment of *Pionier-*





Firefight in the western tunnel of Fort Vaux, 4 June 1916

Fort Vaux, though the smallest of the forts surrounding Verdun, withstood far more punishment than the famed Fort Douaumont, the rapid fall of which in the first days of the campaign so profoundly shocked France. Despite initial assaults in early March 1916, it took until June for the Germans to launch their main attack on Fort Vaux, with the first rounds seeing them capture the superstructure and force their way into the two northern counterscarp bunkers. With no easy way into the rest of the fort, the Germans decided to push out from the captured bunkers into the western and eastern tunnels, hoping to take Fort Vaux from the inside. An assault team from Pionier-Bataillon 27 operating in concert with three flamethrower teams from 8. Kompanie, Garde-Reserve-Pionier-Regiment led by Offizierstellvertreter Schmidt attacked down the western tunnel at 1230hrs on 4 June,

their advance preceded by sheets of fire. The wall of searing flame and choking smoke forced the French defenders back in a frenzy of panic until they were rallied by Lieutenant Girard, who together with some of his soldiers from the 142^e RI stormed back up the tunnel to secure an abandoned Hotchkiss M1914 machine gun. The weapon sits in an ad hoc barricade made up from sandbags and debris, thrown up in the preceding days for just this eventuality. A gunner, a man from one of the 142^e RI's machine-gun companies, is getting his weapon back into action, while Girard, standing tall in the corridor, encourages his men to engage the *Pioniere* who are no more than 6m away, approaching through the smoke. Several infantrymen, inspired by his example, throw grenades and fire their rifles in support, eventually stopping the German advance – for now.

Bataillon 27 led by Offizierstellvertreter Schmidt accompanied three flamethrower teams from 8. Kompanie, Garde-Reserve-Pionier-Regiment; creeping up on the French barricade, they drenched the whole area in writhing streams of flame and oil-thick clouds of choking smoke, followed up with an attack by the *Pioniere*. Initially thrown back by the flames, the French engaged the advancing *Pioniere* with showers of hand grenades, wounding many of them. Lieutenant Girard rallied the fleeing men and got a machine gun working again, forcing the Germans to retreat or take shelter behind whatever cover was available in the blackened passageway. In the eastern tunnel the flamethrower troops were also *Pioniere* of 8. Kompanie, Garde-Reserve-Pionier-Regiment, accompanied by a detachment from Pionier-Bataillon 27 and men from 9. Kompanie, Füsilier-Regiment 39. Advancing up the narrow set of stairs that led towards a sandbag barricade at the top (the site of Leutnant Ruberg's earlier exploding-door experience), the lance operators coated the barricade and everything around it in fire. The defenders threw hand grenades that bounced down the stairs and went off in the middle of the attackers in a battle that see-sawed along the corridor, the Germans claiming that they made it as far as the latrines, the French insisting that the Germans were pushed back to the stairs (Wictor 2007: 95–97). A survivor of the 142^e RI recalled the German attack down the eastern tunnel:

The atmosphere was heavy and tainted. At every moment some part of the barricades blew up, and the grenade duel was resumed. We would not give in. But the air grew hot with all these explosives; the smoke and the stench made it almost impossible to breathe, yet the fighting went on all the time. We had installed machine-guns, which blocked up the gangways and did splendid work. It was then



that the Germans, having contrived to blow up a barricade, attacked us with jets of flame and liquid fire. (Quoted in Bordeaux 1917: 176)

The men wavered, but Lieutenant Bazy, his left arm already bandaged from an earlier wound, steadied them by taking the fight to the Germans, throwing grenade after grenade even as the flames licked around his boots. The smoke was too thick for speech, but the men, inspired by his example, took turns to go forward and stand with him, eventually pushing the *Pioniere* back. Bazy

had succeeded in checking the attack and was beginning to go up again on to the barricade, when the Boches started sending us petards [demolition charges], which knocked us all down with the sandbags on top of us, I was quite convinced that my back was broken, and I only just had enough strength left to put my mask on, as I detected the whiff of poison gas. A private extricated me and carried me to the infirmary while the struggle recommenced. The Germans discharged gases whose heavy fumes hung about the gangways. Despite all their devilish contrivances, their flame-jets, their gases, and their petards, they made no advance. It was magnificent. They shouted to us in French: 'Surrender, or you will all be killed,' and we answered by slinging bombs full at their faces. (Quoted in Bordeaux 1917: 176–77)

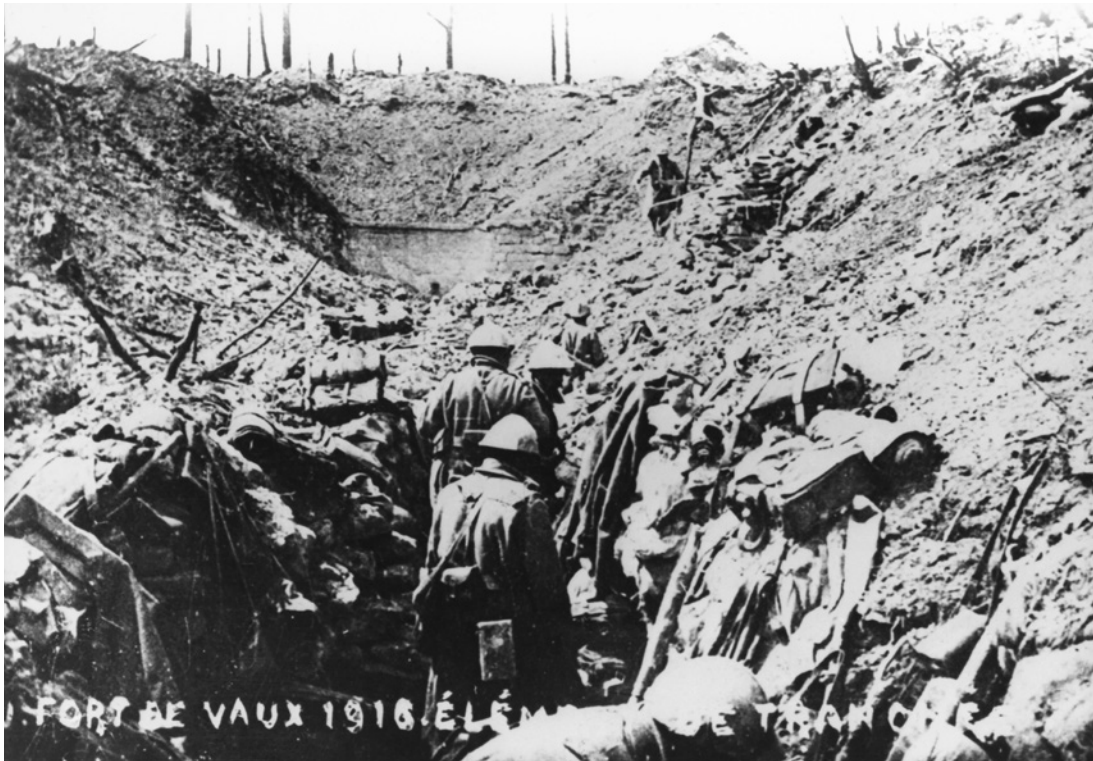
French infantry facing a curtain of fire in front of Fort Vaux, June 1916. A *sous-lieutenant* of the 142^e RI recalled what it was like: 'Everywhere there was nothing but fire and dust, and in this pandemonium a few soldiers on the watch prevented the Boche hordes from passing. Their attacks were renewed every day ... never did we yield an inch of ground so long as there was a man to defend it. I will not speak to you of all that we went through. No water, no revictualling; those who went out to bring us supplies never got back. The only thing that we were not short of was munitions' (quoted in Bordeaux 1917: 170–71). (Underwood Archives/Getty Images)

Although they had fended off the flamethrower attacks, Raynal's men convinced him that the eastern tunnel was too difficult to defend, and he ordered the passage to be completely blocked off and new barricades built much closer to the barracks, just south of the latrine block. He sent another plea for help with the last of his four carrier pigeons (the mortally wounded bird gaining posthumous fame and the name 'Valiant') sometime after midday on 4 June: 'We are still holding out, but are subjected to a very dangerous gas and smoke attack. It is urgent that we should be extricated; let us have immediate visual signalling communication by way of Souville, which does not answer our appeals. This is my last pigeon' (quoted in Bordeaux 1917: 165–66). With no water, an ever-encroaching enemy and no hint of relief on the way, Raynal ordered an attempt at a limited evacuation on the night of 4/5 June, but the German machine guns that wreathed and surmounted the fort were joined by a curtain of artillery fire that stopped all but a few of the defenders from making it away from Fort Vaux.

The next day, 5 June, was heralded with external attacks on both casemates, a terrific explosion tearing a gap in the western one; *Pioniere* had breached the roof and now attempted to flood the interior with jets from their flamethrowers, but the strong air currents rushing out of the fort blew the flames back on the attackers. Lamp signalling had just been re-established between Fort Vaux and the headquarters at Souville, allowing the desperation of those inside the fort to come through all too clearly. In a message sent at 0730hrs stating that the Germans were working on the

A posed shot of a German MG 08 heavy-machine-gun team supporting an infantry advance. The MG 08 with the required cooling water for the barrel jacket and a *Schlittenlafette* ('sled mount') weighed 69kg, making it difficult to move easily, and certainly less than ideal as a close-support weapon. The lighter-weight MG 08/15 would be designed to take on that role, but would not enter service until late 1916. (© Hulton-Deutsch Collection/CORBIS/Corbis via Getty Images)





construction of a mine in the western part of the fort in an attempt to blow up the main vault, Raynal called for artillery fire as quickly as possible; he received no answer, and no gunfire. 'We do not hear your artillery. The enemy is plying us with gas and liquid fire attacks. Our situation is as bad as can be'. Finally, at 0900hrs he received a reply from Souville – 'Don't lose heart. We shall soon attack' – a brief shower of artillery temporarily cleared the *Pioniere* from the superstructure, but still, hour after hour, the promised relief did not arrive. Another message was sent from the fort as night began to fall; the first section was unintelligible, but the remainder made the urgency of the situation all too clear: 'It is essential that I should be delivered this evening and that a fresh supply of water should reach me at once; I am very near the end of my tether. In any case, the troops – officers, N.C.O.'s, and men alike – all did their duty up to the last' (quoted in Bordeaux 1917: 168).

The situation was irrecoverable for the French. The fort was surrounded, and any attempt at a breakout would be met by a massacre of shelling and machine-gun fire. Hope of relief, occasionally raised by heartening messages from Souville, had dwindled and faded as the days passed and no help came. The internal position had been reduced to little more than the main gallery and the barracks. There was no water. The wounded could not be treated, or the dead buried. On 6 June, after a conference with his officers, most of them wounded, Raynal made the decision to surrender. The last fragmentary lamp signal sent from Fort Vaux had been received only a few hours earlier: '53 ... wounded ... aspires ... losses ... You will intervene before we are utterly exhausted. Long live France!' (quoted in Bordeaux 1917: 169).

French soldiers in the ruins of a trench by Fort Vaux during the latter stages of the battle of Verdun. On 8 June, Général d'armée Robert Nivelle ordered costly counter-attacks to try to recapture Fort Vaux after its fall, but to no avail. The brunt of the fighting fell on the Régiment d'infanterie coloniale du Maroc and the 2^e Zouaves, neither of which got so much as a single man back inside the fort; the Zouaves alone recorded losses of 19 officers and 846 men before acknowledging defeat on 17 June. (Keystone-France/Gamma-Keystone via Getty Images)

Analysis

BOIS DES CAURES

Driant was certainly right in his reading of German intentions toward his position, and was also well-justified in his concerns over the parlous state of the fortifications he was expected to defend. The general sluggishness of the French high command in appreciating the lack of preparedness in front-line positions as well as the vulnerability of the Verdun sector more generally, was an appalling oversight. If the German attack had not been postponed because of poor weather it is quite likely that the French positions would have been shattered in short order. As it was, the meagre and hasty efforts to shore up the front line proved their value on 21 February, augmented by the character and charisma of Driant in sustaining the defence of the Bois des Caures over the first vital days. Despite such valiant resistance, the overarching story of the opening stage of the battle was desperately grim for the French: one position after another was captured, German advances were slow but consistent, and the whole front was in danger of imminent collapse, especially in the wake of the demoralizing loss of the supposedly impregnable Fort Douaumont.

For the French a catastrophe might be looming, but the German position was not quite as favourable as French woes suggested. German progress had been slower than envisaged, and casualties much higher. The French were fighting for every metre of ground with a ferocious stubbornness, counter-attacking constantly in spite of the mounting casualties such tactics were causing them. In some respects Falkenhayn's approach did seem to be working: the overwhelming artillery barrages succeeded in suppressing the French guns while also isolating and cowing the defenders in the trench lines; *Stoßtruppen* supported by *Pioniere*



A fine picture of a pair of infantrymen from the 204^e RI at an observation post in the area of Verdun, July 1916. They both wear the 'Vareuse' tunic that was adopted on 9 December 1914, with a modified version issued from 10 October 1915 that added a lining and changed the design of the pockets. Owing to a shortage of 'horizon blue' cloth, which was reserved for higher-priority requirements, the choice of material for the early-war tunics was usually left up to individual units, with many tunics being made from dark-blue or brown corduroy, a practice that died out with the greater efforts at standardization that accompanied the 1915 modifications. (adoc-photos/Corbis via Getty Images)

and flamethrower teams proved to be very effective in rolling up enemy trenches, though not without loss; and the use of shock weapons such as gas and particularly flamethrowers, even though they were expected by men like Driant, also had a dramatic effect on the morale of the defenders. Yet the German artillery, Falkenhayn's hammer of victory, had not been anything like as effective as expected. The initial barrages, despite the toll they took, did not destroy all the French positions, nor did they kill or incapacitate all the defenders, and Fort Douaumont had fallen through chance, not from the destructive power of even the heaviest of the German guns. There would still be much fighting required if the Meuse Heights were to fall, fighting that would demand ever-increasing numbers of infantry to achieve that goal.

The body of a fallen soldier on Côte 304, 1916. One of the defining horrors of Verdun was the relatively constricted space in which the battle was fought. Though the battles of 1914 and 1915 had been just as bloody as what was to follow in 1916, if not more so, the ferocious intensity of the struggle at Verdun, continuing for months at a time over the same few fields, resulted in layers of unburied dead being repeatedly interred and disinterred by near-constant artillery fire that utterly disfigured the landscape. The battlefield was cloaked in a miasma of putrescence and destruction – hills were shorn of trees, fields were churned into almost impassable quagmires, and the area's man-made infrastructure was shattered, to the extent that nine of the villages around Verdun were so completely destroyed in the course of the fighting that there was nothing whatsoever left of them to rebuild after the war. They would become known as *villages détruits* ('destroyed villages'), their sites remaining as memorials to the battle. (The Print Collector/Getty Images)



MORT-HOMME

The German attack on the western bank of the Meuse was driven by tactical necessity (the suppression of enfilading French artillery) rather than as part of a larger strategic plan. Unlike the attack of 21 February there was no surprise to be had, and the initial overwhelming advantage in guns was not what it was, due to attrition within German artillery batteries and the reorganization and reinforcement of their French counterparts by Pétain. Whatever the reasons for Falkenhayn's parsimony in only attacking on the eastern bank of the Meuse at the outset of the campaign, they proved to be short-sighted and oblivious to any unanticipated behaviour on the part of the enemy. An operation that had been expected to last a matter of days had taken the best part of three months and was only achieved at enormous cost, the exact opposite of Falkenhayn's overarching objective. By the end of March the losses accrued by German forces should have been enough to show that the *Ermattungsstrategie* around which the whole campaign had been conceived was not working.

The land on the western bank of the Meuse was far less conducive to the sort of infiltration tactics seen in the first week of the battle, but they still found employment where possible, especially in conjunction with flamethrower attacks. Even so, the reality usually facing the Germans was that it was necessary to advance over open ground and attack contiguous lines of trenches often reinforced with strongpoints. The outcome was that attacks and counter-attacks were conducted in the more 'traditional' manner, with correspondingly traditional outcomes. Such piecemeal gains and rebuffs were the order of the day for both sides, resulting in incremental progress bought at an unconscionable cost.

The French enjoyed better artillery support than during the initial phases of the campaign, but though it proved instrumental in buttressing the infantry's position time and again, it was still short of what the Germans could bring to bear. The 'Noria' system of regular replacement was valuable, and certainly helped maintain the morale and resilience of regiments in the face of near-

constant German artillery bombardment and infantry attacks. There was also a closer degree of parity between the firepower of French and German regiments than had been the case at the start of the war; indeed the adoption of the CSRG Chauchat automatic rifle, just starting to arrive at the front line in April 1916, was an indication of French advances in doctrine and platoon-level tactics.

FORT VAUX

Although even the heaviest German guns failed to subdue Fort Vaux, it was the breaches caused by the shelling of the counterscarps that allowed *Pioniere* to fight their way into the fort's interior. The artillery bombardments also had little physical effect on the defenders in the tunnels below, though the mental strain of living through such an experience should not be underestimated. The real value of the German artillery at Fort Vaux was in keeping the position isolated from any significant reinforcement or resupply, which was to prove far more damaging.

The use of *Pioniere* against heavily fortified positions was in many ways more appropriate than their adopted role in attacking trench lines, the breaching and capture of fortifications being one of the key tasks such units were originally trained to undertake before the war. The morale-shrivelling quality of flamethrowers was even more potent in dank, narrow tunnels deep underground, but the physical reality of using such weapons in an enclosed space meant that they often caused the attackers as many problems as they did the defenders. Flames and smoke were not much more controllable than gas, and the Germans were disheartened by the failure of their flamethrower teams to finish the job at Fort Vaux, though they did not understand just how harrowing their use had been for the French who had to face them. Even accepting the relative ineffectiveness of the flamethrowers, the attackers did manage to take the fort in barely six days through a combination of artillery bombardment, innovative infantry tactics and the use of special weapons.

Raynal, taking up his post scarcely a week before the German assault, had long enough to understand the shortcomings of his new position without having the resources or time to do anything substantial to remedy them. The state of the water supply would prove to be the most acute issue in the coming days, but that was an invisible problem until far too late. Even so, it was hardly the only issue in a fort lacking its most important offensive weapons, regularly cut off from reinforcement or supply, and overrun with hundreds of extra personnel to feed and maintain. The defenders did everything they could, but the fort's only real hope was to be relieved by a strong counter-attack, something that proved impossible to mount; there were several attempts at relief but they were piecemeal, poorly thought through and on far too small a scale to have any hope of success.

Though the Germans would capitalize on the fall of Fort Vaux, taking the highly contested village of Fleury soon afterwards, the larger strategic reality of their situation was that their forces were exhausted, their losses far too high, and the resistance of the French far too stubborn to allow for anything much more than local tactical victories that were usually costly and always precarious due to the French Army's aggressive doctrine of counter-attacking, intent on retaking every metre of lost ground.

Aftermath

The roles of artillery and machine guns, already the defining weapons of the new way of war by the time of Verdun, were also changed somewhat by the battle. The heavy guns proved to be rather less deadly than assumed, with forts like Douaumont and Vaux proving remarkably resilient to the very worst that the large-calibre shells could deliver; in both cases it was the German infantry that were the vital tool in the fall of both fortresses. Evolutions in tactical gunnery, including box barrages and creeping barrages, would also prove to be useful in taking and then holding enemy trench lines.

The machine gun was the dominant defensive weapon on the front line, its withering curtains of fire proving to be a nightmarish obstacle for both German and French infantry. Though the Germans had a deeper appreciation of the potential value of machine guns as well as correspondingly better doctrine, both sides had radically increased the number of guns available to a regiment by the time of Verdun, and each employed them in much the same manner. The one evolution that appeared during the battle was the CSRG Chauchat, technically an automatic rifle rather than a light machine gun, but which was built primarily to be an offensive weapon, allowing the benefits of automatic fire to accompany the French infantry in their attack. Doctrine was still developing for the Chauchat and the weapon had numerous problems, but it would become a vital fixture in French (and later American) infantry platoons. The German development of a comparable light machine gun (though the term 'light' should be used advisedly considering that the MG 08/15 weighed 17.8kg, required 3kg of cooling water for the barrel jacket and relied on 100-round ammunition belts carried in external drum magazines) did not appear until late 1916, but it met a well-recognized need – moving with the first waves



of German infantry and supporting the point of their attack, then helping to establish an effective defence of captured trenches before the French had time to launch a counter-attack.

As far as the bigger picture was concerned, Falkenhayn's plan of *Ermattungsstrategie* failed because there was no consistent or well-developed operational method within the German Army to support such an approach (Foley 2005: 265). Despite the supposed primacy of massed artillery batteries and the new infiltration methods employed by *Stoßtruppen*, the German commanders at Verdun attacked with a verve and aggression that showed they were mostly still wedded to the old way of doing things. Falkenhayn's orders, though obeyed to the letter, were not always fully understood in their intent, allowing gaps to develop between his desires and his generals' objectives. The German high point of the campaign was the capture of Fleury on 23 June, but by then 5. Armee's divisions had already accrued such enormous losses that, judged against Falkenhayn's own terms of victory, realistically the battle had been lost by the end of April.

Despite Falkenhayn's desire to draw the French into a vast bloodletting, the determination of Pétain's divisions to hold on at all costs stopped the German advance from achieving its initial tactical goals, and would ultimately prove to be hugely expensive in German lives. The crucial moment came with Castelnau's decision to hold the eastern bank of the Meuse rather than withdraw on 24 February. Despite the fact that such a decision seemed to accord with Falkenhayn's deepest wishes, the historian Alistair Horne observed that while a 'fighting retreat' out of the salient would rebalance the French line at the cost of a city of little strategic value, there was no guarantee that once the battered and demoralized French Army began to fall back, it would stop and re-join the fight when its generals wished it to (Horne 1964: 131). Holding Verdun might not accord with good strategy, but its loss could have catastrophic consequences on civilian and military morale. For France, it was a price worth paying.

ABOVE LEFT

French wounded from Verdun, 1916. The lack of attention paid to the timely and suitable care of its wounded soldiers was one of the French Army's great failings throughout the course of World War I. Those that survived evacuation by handcart, ambulance and railway cattle truck to make it back to a base hospital were triaged into those who were too far gone to bother with, those who might survive but be of no further use as soldiers, and those who might be returned to their units with the right care and attention, a policy known as the 'conservation of effectives' (Horne 1964: 66). (Photo12/ Universal Images Group via Getty Images)

ABOVE RIGHT

The remains of German soldiers who died at Verdun, uncovered in 1919. France suffered 379,000 casualties (163,000 of whom were killed), while Germany suffered between 336,000 and 434,000 casualties (of whom 143,000 were killed), numbers that show Falkenhayn's approach to be one of abject failure. (Library of Congress)

UNIT ORGANIZATIONS

French

A French infantry division had two infantry brigades – each with one or two infantry regiments and one or two light-infantry (*chasseur*) battalions (usually three units per brigade) – plus a field-artillery regiment and several companies of engineers. A French infantry regiment comprised a headquarters company and three (sometimes only two) infantry battalions. Each battalion had four infantry companies and a machine-gun section (three infantry companies and a machine-gun company from April 1916), numbered sequentially through the battalions (e.g. the 1^{er} Bataillon fielded the 1^{er}–4^e compagnies and the 1^{er} Compagnie de mitrailleuses, the 11^e Bataillon fielded the 5^e–8^e compagnies and the 2^e Compagnie de mitrailleuses, and so on).

The 72^e DI at the Bois des Caures consisted of the 143^e Brigade d'infanterie (the 351^e RI, 362^e RI, 56^e BCP and 59^e BCP), the 144^e Brigade d'infanterie (the 364^e RI, 365^e RI and 366^e RI), one squadron of the 2^e Hussards, one squadron of the 4^e Hussards, one *groupe de 75* of the 61^e RA (three or four batteries to a *groupe*, four guns to a *batterie*), one *groupe de 75* of the 59^e RA, one *batterie de 75* of the 11^e RA, one *batterie de 75* of the 41^e RA, one *batterie de 75* of the 45^e RA, Compagnie 25/1 and Compagnie 25/21 of the 9^e RG and a *détachement télégraphistes* of the 8^e RG. All the 72^e DI's line-infantry regiments had only two battalions each.

The 42^e DI at Mort-Homme consisted of the 83^e Brigade d'infanterie (94^e RI, 8^e BCP, 16^e BCP), the 84^e Brigade d'infanterie (151^e RI, 162^e RI), three *groupes de 75* of the 61^e RA and Compagnie 6/53 of the 9^e RG.

At Fort Vaux the original garrison consisted of: infantrymen of the 6^e Compagnie and 3^e Compagnie de mitrailleuses, 142^e RI; gunners from the 34^e Batterie, 5^e RAP, and 6^e RA; and two companies of sappers from the 2^e and 9^e RG (Compagnie 17/51T and 2^e Compagnie). Surrounding fortifications were occupied by the 101^e RI and the 142^e RI.

German

A standard 1916 German infantry division consisted of an infantry brigade (three infantry regiments), two cavalry squadrons, one or two *Pionier* companies (each with six light trench mortars), a mortar company (two heavy, four medium and six light mortars), a field-artillery regiment with nine batteries (three batteries with four 10.5cm howitzers each, and six batteries with four 7.7cm field guns each). An infantry regiment comprised three battalions, each of four 240-man infantry companies and one machine-gun company (six MG 08 heavy machine guns).

At the Bois des Caures, 21. Infanterie-Division consisted of: 41. Infanterie-Brigade (Infanterie-Regimenter 87 and 88); 42. Infanterie-Brigade (Füsilier-Regiment 80 and Infanterie-Regiment 81); 2. Eskadron, Uhlan-Regiment 6; 21. Feld-Artillerie-Brigade (Feld-Artillerie-Regimenter 27 and 63); 1. Kompagnie, Pionier-Bataillon 21; and Feldfernsprecher-Abteilung 21.

At Mort-Homme, 12. Reserve-Division consisted of: 22. Reserve-Infanterie-Brigade (Reserve-Infanterie-Regimenter 38 and 51); 23. Reserve-Infanterie-Brigade (Reserve-Infanterie-Regimenter 22 and 23 plus Reserve-Jäger-Bataillon 6); 1., 2. and 3. Eskadronen, Reserve-Uhlan-Regiment 4; 12. Reserve-Feld-Artillerie-Brigade (six batteries); and 1. and 2. Reserve-Kompagnien, Pionier-Bataillon 6.

At Fort Vaux, 50. Infanterie-Division was composed of 100. Infanterie-Brigade (Füsilier-Regiment 39 plus Infanterie-Regimenter 53 and 158); 1. Eskadron, Ulanen-Regiment 16; 50. Feld-Artillerie-Brigade (Feldartillerie-Regimenter 99 and 100, plus Fußartillerie-Regiment 50); and Pionier-Kompagnien 99 and 100. The division was supported by troops from 8. Kompagnie, Guard-Reserve-Pionier-Regiment, plus Pionier-Bataillone 20 and 27.

At the start of the battle, Sturmabteilung *Rohr* consisted of a staff detachment, two *Sturm-Kompagnien*, one *Pionier-Park-Kompagnie*, a *Kanonen-Abteilung* (7.7cm *Infanteriegeschütze*), a *Maschinengewehr-Zug* (six MG 08), a *Minenwerfer-Abteilung* (four light *Minenwerfer*) and a *Flammenwerfer-Trupp* (six *Kleif* flamethrowers). The flamethrowers, seconded from the Garde-Reserve-Pionier-Regiment, were attached to the *Sturmabteilung*. In April 1916 two additional *Sturm-Kompagnien* were added, while the *Kanonen-Abteilung* was converted into Gebirgs-Haubitz-Batterie 5, equipped with 10.5cm guns.

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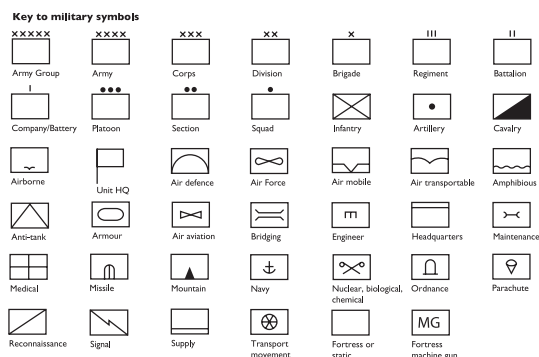
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Dedication

To Rick Lippiett, always aspiring to Faramir, ever ending up Boromir.

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Comparative ranks

US (NATO)	French	German
<i>no equivalent</i> ¹	Généralissime	<i>no equivalent</i>
General of the Army	Maréchal de France ²	Generalfeldmarschall
General	Général d'armée	Generaloberst
Lieutenant general	Général de corps d'armée	General der Infanterie
Major general	Général de division	Generalleutnant
Brigadier general	Général de brigade	Generalmajor
Colonel	Colonel	Oberst
Lieutenant colonel	Lieutenant-colonel	Oberstleutnant
Major	Commandant/ Chef de bataillon	Major
Captain	Capitaine	Hauptmann
<i>no equivalent</i>	Capitaine adjudant-major	<i>no equivalent</i>
First lieutenant	Lieutenant	Oberleutnant
Second lieutenant	Sous-lieutenant	Leutnant
Officer candidate	Aspirant	Fähnrich
<i>no equivalent</i>	<i>no equivalent</i>	Feldwebelleutnant
<i>no equivalent</i>	<i>no equivalent</i>	Offizierstellvertreter ³
Sergeant major	Adjudant-chef	<i>no equivalent</i>
Master sergeant	Adjudant	<i>no equivalent</i>
Staff sergeant	Sergent-major	Feldwebel
<i>no equivalent</i>	Sergent fourrier	Vizefeldwebel
Sergeant	Sergent	Sergeant
Private First Class	Caporal	Unteroffizier/Korporal (Bavarian units)
<i>no equivalent</i>	Caporal fourrier	<i>no equivalent</i>
Private Second Class	Soldat de 1re classe	Gefreiter
Private	Soldat/Fantassin/Chasseur	Musketier/Grenadier/ Füsilier/Schütze/ Jäger/Pionier

1. The equivalent US rank was 'General of the Armies' but it was only held once by a serving officer, John J. Pershing, in 1919 in recognition of his war service.
2. Awarded in recognition of great success in war rather than a substantive rank.
3. An appointment rather than a substantive rank.